the OIL AND GAS JOURNAL

41

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The Oil and Gas Journal

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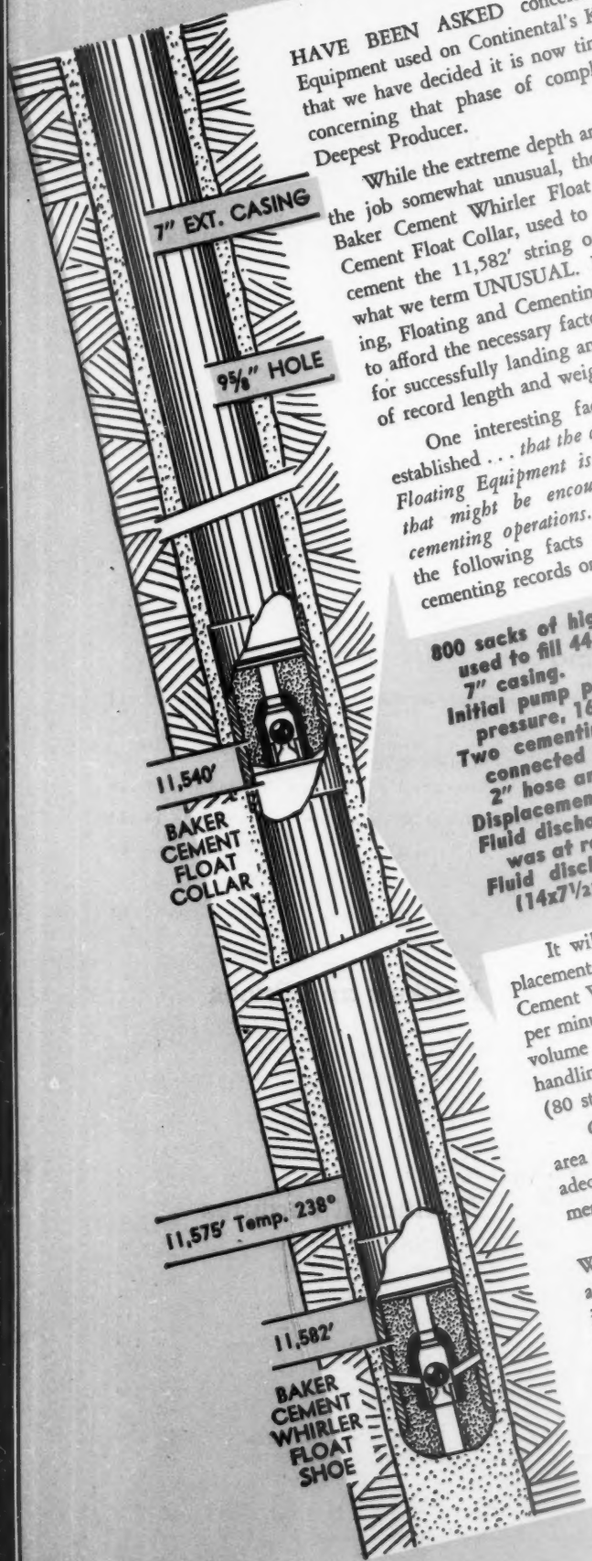
So Many QUESTIONS—



HAVE BEEN ASKED concerning the Floating Equipment used on Continental's KCLA-2 at Wasco that we have decided it is now time to tell the story concerning that phase of completing the World's Deepest Producer.

While the extreme depth and other factors made the job somewhat unusual, the performance of the Baker Cement Whirler Float Shoe and the Baker Cement Float Collar, used to safely guide, float, and cement the 11,582' string of 7" casing, was NOT what we term UNUSUAL. For Baker Cement Guiding, Floating and Cementing Equipment is designed to afford the necessary factors of safety and efficiency for successfully landing and cementing casing strings of record length and weight.

One interesting fact, however, was definitely established . . . *that the circulation area through Baker Floating Equipment is adequate for any condition that might be encountered during circulating or cementing operations.* This is well substantiated by the following facts and figures taken from actual cementing records on Continental's KCLA-2.

800 sacks of high-temperature cement were used to fill 4440 feet of hole outside of the 7" casing.
Initial pump pressure, 1200 lbs.; final pump pressure, 1600 lbs.
Two cementing trucks were utilized, each connected to the casing by a combination 2" hose and pipe connection.
Displacement time, 43 minutes.
Fluid discharge from cementing truck pumps was at rate of 812 gallons per minute.
Fluid discharge from rig steam pumps — (14x7½x18) was 415 gallons per minute.

It will be noted from the above that the displacement through the 2⅛" orifice in the Baker Cement Whirler Float Shoe was actually 415 gallons per minute - - - approximately equal to the maximum volume of fluid that the pumps were capable of handling at their peak efficiency at ultimate speed (80 strokes per minute).

Certainly this is conclusive evidence that the area through Baker Floating Equipment is more than adequate to meet any extreme fluid volume requirement necessary in circulating or cementing operations.

AND . . . the New Baker Cement Wash-Down Whirler Float Shoe is an even MORE efficient Shoe, affording these Results: Makes it Easy to Land Casing; Washes the Formation to Insure a Better Bond of the Cement; Whirls the Cement Around the Shoe and Up and Around the Casing, Minimizing the Tendency to Channel; Complete and Easy Drillability of Concrete and Bakelite.

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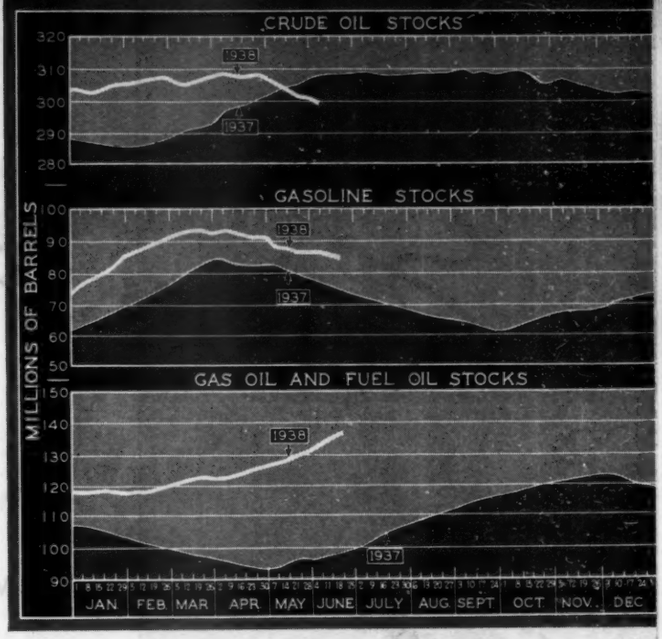
Trends

With Crude Production Unchanged, Fuels Weak As Gasoline Strengthens


CRUDE OIL STOCKS
GASOLINE STOCKS
GAS OIL AND FUEL OIL STOCKS
MILLIONS OF BARRELS
1938
1937
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV. DEC

WITH national crude oil production continuing at the levels established the latter part of May, price developments of the past week indicated strength in gasoline markets and weakness in the heavy oils.

Advances in refinery gasolines which have been under way in the Mid-Continent and the Middle West over the past month spread to adjoining areas and a better tone was reported in export and domestic markets generally. This improvement in refinery gasoline markets was carried through to posted dealer and retail sales at a few points. An exception was the 2-cent reduction in third-grade posted dealer prices in Chicago, brought about by competitive conditions.

CRUDE PRODUCTION *3,138,105 barrels daily average—up 2,681 barrels.*

CRUDE STOCKS *298,266,000 barrels as of June 4—down 2,720,000 barrels.*

GASOLINE STOCKS *84,476,000 barrels as of June 18—down 1,673,000 barrels.*

GAS AND FUEL OIL STOCKS *137,007,000 barrels on June 18—up 910,000.*

REFINERY RUNS *3,080,000 barrels daily week ending June 18—down 75,000.*

With the gasoline market among the smaller Mid-Continent refiners particularly strong, it is hoped that advances now totaling one-half cent per gallon in tankcar sales will continue and spread throughout the entire country. It is felt that further increases are necessary to assure higher posted dealer and tank-wagon quotations needed by those who sell the bulk of their refinery gasoline output on contracts based on these wholesale prices.

The favorable developments in the gasoline market were offset in many cases by the decline of 10 cents per barrel effective Monday in bunker fuel oil quotations along the Atlantic seaboard. Bunker prices at Gulf Coast points were reduced 5 cents per barrel at the same time. The Standard of New Jersey said the reductions were due to the restricted industrial demand for the heavy oils coupled with the sagging tanker rates applying to coastwise traffic.

The present price of 95 cents per barrel for Bunker C fuel oil at several Atlantic seaboard points is the lowest price since August, 1935. From May 11 to November 2 last year the price was $1.35, the highest in several years. A slackening in demand, with continued heavy production, has brought three reductions in price since last November. The importance of this price decline to Gulf Coast and East Coast refiners is shown by the fact that the present production of residual oils in those areas is approximately 375,000 barrels daily.

From April 1 to June 11, according to the A.P.I. weekly reports, stocks of fuel oil and gas oil increased ten million barrels. About half of this gain is accounted for by Gulf Coast and East Coast refiners. With no immediate prospects for an improvement in demand, which in the case of the heavy residual oils has been running 15 per cent behind last year, the remedy for the present statistical situation lies in reduced output.

DAILY AVERAGE PRODUCTION FOR WEEK

	June 18 1938	Bur. Mines June est.	June state allowables	June 11 1938
Oklahoma City	106,100			113,850
Fitts	40,950			44,025
Remainder of state	299,000			306,900
Total Oklahoma	446,050	508,300	405,000	464,775
East Texas	363,497			364,000
West Texas	179,446			180,901
North Central Texas	97,698			98,329
Texas Panhandle	64,849			55,798
East Central Texas	89,348			95,750
Gulf Coast Texas	302,548			301,798
Southwest Texas	92,250			91,949
Total Texas	1,189,636	1,329,300	1,127,661	1,188,525
North Louisiana	80,875			77,870
Gulf Coast Louisiana	181,800			181,198
Total Louisiana	262,675	250,000	250,475	259,068
California	679,500	650,000	620,000	671,750
Kansas	159,550	172,300	160,000	148,650
Arkansas	42,955	48,300		42,725
Eastern fields	141,000	145,400		144,700
Michigan	55,219	54,000		56,851
New Mexico	90,880	108,300	91,000	90,820
Rocky Mountain area	70,640	67,400		67,560
Total United States	3,138,105	3,333,300		3,135,424

Increase, 2,681 bbls. daily.

Outstanding in crude production was the strong support given to a continuance of Sunday and Saturday shutdowns in Texas during July at the railroad commission hearing Monday. Previous to the hearing members of the commission had indicated that the shutdowns might be lifted in July on the ground that the emergency situation was over. It developed at the hearing that the actual demand for Texas crude probably would not be much larger in July than in June, which means that if the shutdowns are ended an equivalent reduction in production should be provided through proration orders.

Due to the necessity of lowering gasoline stocks rapidly it is believed that crude runs to stills will be kept near June levels throughout July.

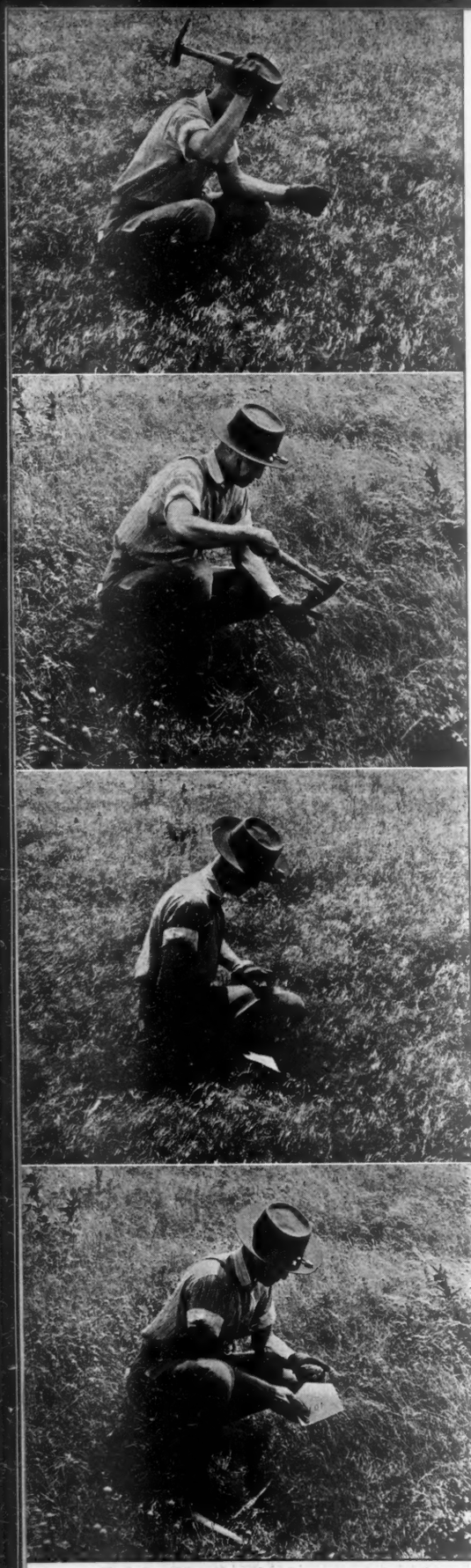


Fig. 1—Showing the four steps in taking a soil-sample from one-half to 2 inches deep. First, the mason's jack hammer being struck into the earth at the proper angle; second, sample is taken in hand; third, closely molded in an oval shape and wrapped in cellophane; and fourth, placed in envelope properly marked for delivery to the laboratory

Soil Analysis as an Aid in

By MITCHELL TUCKER

The quantitative analysis of surface or near-surface soils has long been considered as a possible means of locating new oil and gas fields. Studies of "paraffin dirt" represent perhaps the earliest successful use of the theory. During the past 10 years or so a great deal of fundamental scientific research has been conducted along this and related lines in an effort to perfect a practical and commercial process.

Rather recent developments and improvements in the commercial aspects of the Smith* process have been made, and have suggested soil analyses as an expanding aid in geophysical studies. In view of the great amount of interest being displayed in this matter, some of the theories and practical procedure followed in the process will be briefly described. No effort is made to support or refute its merits.

Briefly, the process employs geochemical determinations in geophysical interpretations. It is not proposed as an exact science, but rather is offered as a further aid or check to known surface and subsurface data, and to the other well-established geophysical methods of locating structures favorable to the accumulation of oil or gas.

The principal concepts of the theory back of soil analysis surveys in detecting structure and petroleum deposits are as follows:

1. Hydrocarbons from oil and/or gas deposits have and continue to filter upward through the earth, regardless of depth or occurrence of supposed impervious formations. This upward movement naturally follows somewhat the paths of least resistance, and is thus more detectable at points where faulting, folding, or other subsurface abnormalities exist.

2. From soil samples systematically taken at or near the surface, laboratory analysis can be made which will indicate relatively the quantitative hydrocarbon value of each.

3. Through carefully perfected means of interpretations, these relative findings can be plotted and correlated with sample stations on the surface in such a way as to indicate structure and the probable presence of petroleum below.

The question of whether or not fractional showings from deeply buried petroleum deposits are continually coming to the surface, and how, has prompted much interesting speculation. In the first place, theoretically at least, the infinitesimal showings of hydrocarbon will be continuous, if at all, and will continually be discharged as carbon dioxide or water vapor when oxidized with air. Hence, if the samples are properly taken, it is contended that weathering or washing will not interfere with the showings. As a matter of further speculation, it has been suggested that this upward migration of hydrocarbon fractions from buried deposits of petroleum is assisted or made possible by the gravitational forces which are known to keep the earth active at all times.

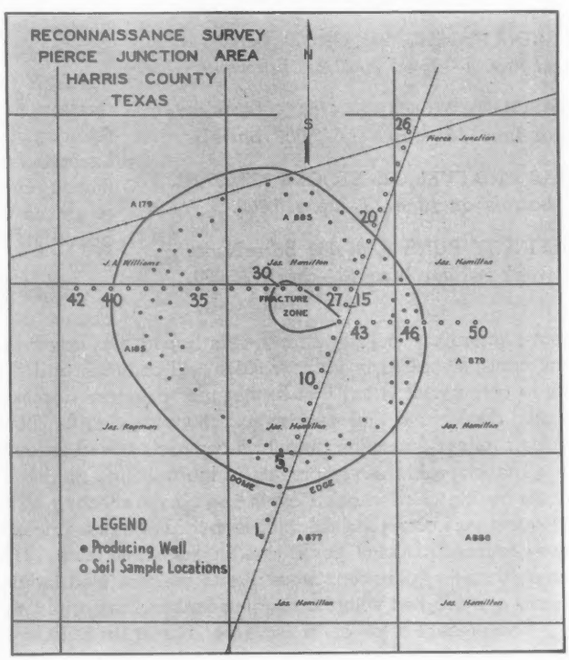


Fig. 3—Showing direction of line-tests (small circles indicating position of each sampling station) across Pierce Junction salt dome, in the form of a preliminary reconnaissance survey

In tracing the details of the process, the procedure will be described in the following steps: (1) Field sampling technique, (2) laboratory analysis, (3) mathematical calculations and graph preparation involved, and (finally) interpretations as made on each of the several different types of structural features containing petroleum.

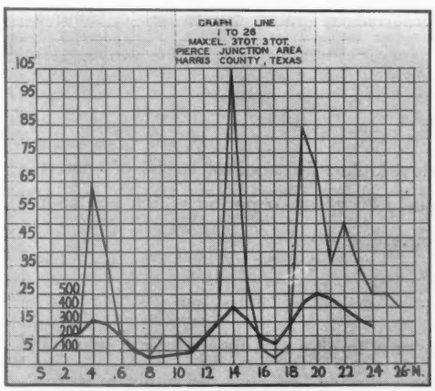
Soil samples are taken every one-tenth mile in systematic lines across the area which is being studied. These lines take the form of reconnaissance, radial or grid surveys. For preliminary work

*Robert O. Smith, president, Geological Scientific Service Co.

Surveys Being Made Geophysical Studies

reconnaissance lines (generally referred to as line-tests) are run at right angles. If nearby wells or other subsurface information is available to "tie to," these line-tests are always started from them. In faulted areas, lateral line-tests may later be run in order to define the extent of such features.

If certain abnormalities in the hydrocarbon showings are noted at any point on these preliminary line-tests, there may be justification to begin a radial survey centering near that point. Radial work consists of running first four lines at 90-degree angles from a central point; then four intermediate lines at 45-degree angles; then eight additional intermediate lines to make a complete 16-line radial survey. Such work is employed in outlining salt domes, anticlines, and similar features.



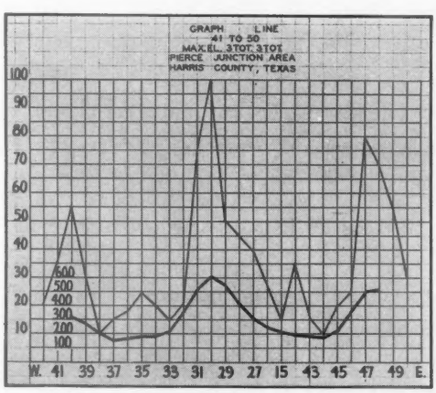


Fig. 4—Graphic record made for interpretative work from laboratory analyses of soil samples taken at the various stations on the Pierce Junction reconnaissance survey (Fig. 3). Ordinate points indicate relative hydrocarbon showings; points along the abscissa represent sampling stations

The grid survey is used on special occasions where it is desired to have a detailed picture of areas which have been indicated to be on structure from other previous studies. Line-tests are run in the form of a grid one-tenth of a mile apart,

STUDY OF POSSIBILITIES

Since the anticlinal theory was accepted by the oil industry in the early 80s to account for the accumulation of gas and oil there has been a constantly changing technique applied to the search for petroleum. These new methods have enabled the industry's supply to keep ahead of the demand.

In this connection wide interest has been manifested recently in the possibilities of "soil analysis" as an additional exploratory tool in the efforts to find new oil reserves. For several years a few scientists within and outside the oil industry have been interested in the study of the accumulation of gas in surface rocks and soil. These studies have now advanced to commercial applications.

The accompanying article covers a particular type of this work giving an outline of the procedure including the taking of samples, testing in the laboratory and the interpretation of the data secured.

and for the purpose of more detailed correlations, samples are taken every one-twentieth of a mile apart instead of one-tenth of a mile as in other type surveys.

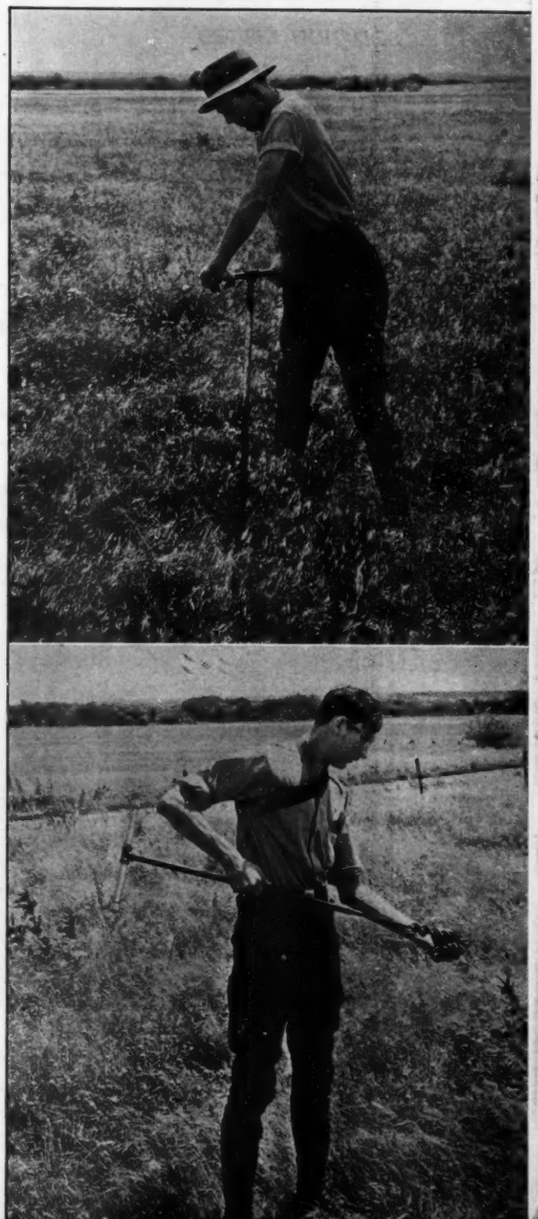
Field sampling crews consist of a manager and from one to five men. In level country, one sampler may work independently on each line-test. In heavily wooded country where travel in direct lines is difficult, two men are assigned to each line, one carrying an ax and brush knife, and the other taking samples. In marsh or swamp lands, such as certain portions of the Gulf Coast, the entire crew may travel by boat.

Crew personnel is trained in civil engineering and the fundamentals of surface geology. Where conditions warrant, a trained geologist or paleontologist may accompany them so that all available data may be recorded. Predetermined directions of line-tests are made by the aid of a compass where possible, but in rough terrain or areas where detailed radial or grid surveys are made, the engineer's transit is used to assure the correct location of sampling lines. Distance between sampling stations is determined by pacing. By tests each man finds the number of steps he normally takes in one-tenth of a mile, and is guided thereby.

The crews are trained to construct a map while taking samples, upon which important markers are noted, such as highways, creeks or rivers, tree lines, and all other surface indications which will be useful in later interpretation work.

(Continued on Page 39)

Fig. 2—Showing procedure in taking deeper soil samples. First, boring the auger bit into the ground to the desired depth; second, removing soil from the bit. Samples are wrapped and saved in the same manner as shown in Fig. 1



SPARKS FROM THE NEWS

BACK TO SURFACE

After spending many millions yearly obtaining information on formations several thousand feet deep geologists now are returning to the surface to investigate the possibilities of soil analysis in relation to future oil discoveries.

FUEL ECONOMY

The S.A.E. sessions last week indicated that oil technologists are more interested in fuel efficiency and economy than are the engine-builders.

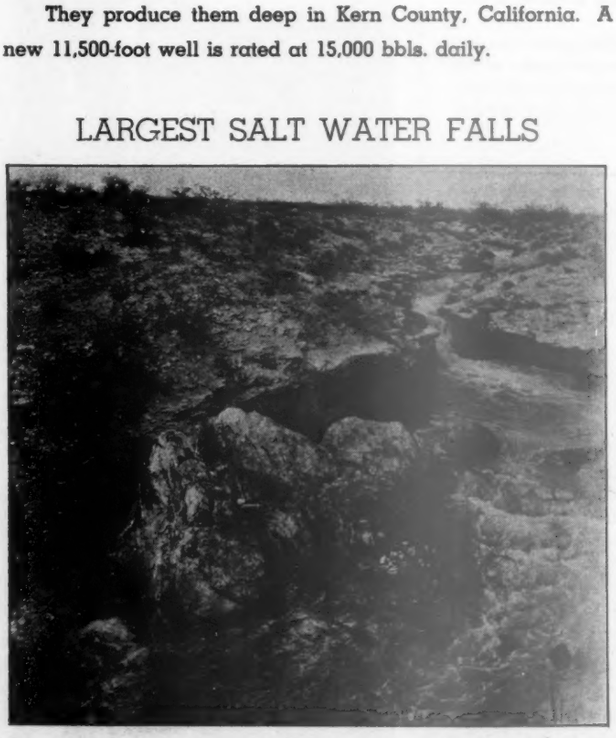
SOLUTION NEEDED

The heads of the largest oil and mail-order companies were allied Saturday through marriage of a son of one and a daughter of the other. A wag suggests this may point the way to a solution of the oil industry's marketing problems.

DEEP GUSHER

They produce them deep in Kern County, California. A new 11,500-foot well is rated at 15,000 bbls. daily.

LARGEST SALT WATER FALLS



It's one of the rapids and falls through which 560,000 bbls. of salt water produced daily in the Hendricks field, Wick County, Texas, rushes to natural caverns. Enough water to supply a city of 150,000 people

ACCOMPLISHMENTS

Despite recent price cuts, the membership of the Pennsylvania Grade Crude Oil Association had many tangible accomplishments to point to at their fifteenth annual meeting in Pittsburgh.

SHORT RECORD

When California's deepest well started producing at 13,170 feet some said it was a record that would last a long time. The new well in South Louisiana broke it in three months.

MAJOR INTEREST

Kentucky oil men attending the annual meeting at Lexington, after discussing means of improving oil conditions, revealed their major interest by going out to see a famous horse.

SURVIVAL

They have been developing the shallow areas of eastern Kansas steadily for nearly 75 years, a period which has seen many gusher areas come and go.

BUSINESS JUDGMENT

The Ethyl case appears to hinge on the matter of whether a licensor may exercise ordinary business judgment in granting licenses to jobbers. The government says not.

EXPLANATION

The explanation for another 10-cent cut in Bunker C fuel oil prices can be found in the curve showing the rapid increase in stocks in recent months.

STRONG POSITION

An $85,000,000 expenditure by one company to provide funds for expansion and reconditioning of existing facilities indicates the oil industry's strong position. The debenture issue which will provide the funds was oversubscribed.

CONTRAST

The strong support given curtailment plans of the Texas Railroad Commission at hearings is in sharp contrast with the stormy and negative sessions of two or more years ago.

Pennsylvania Grade Meeting Is Offered Brighter Picture

By J. P. O'DONNELL

PITTSBURGH, Pa., June 18.—Producing, refining and marketing members of the seriously depressed Pennsylvania oil industry faced the future more optimistically following the annual meeting of the Pennsylvania Grade Crude Oil Association here yesterday and today. Despite the fact they are struggling with the lowest lubricating oil prices in a decade, the lowest crude oil prices in five years and already high and increasing stocks, they heard predictions that a brighter picture may be expected in the future though there were no assurances there would be any immediate alleviation of the situation.

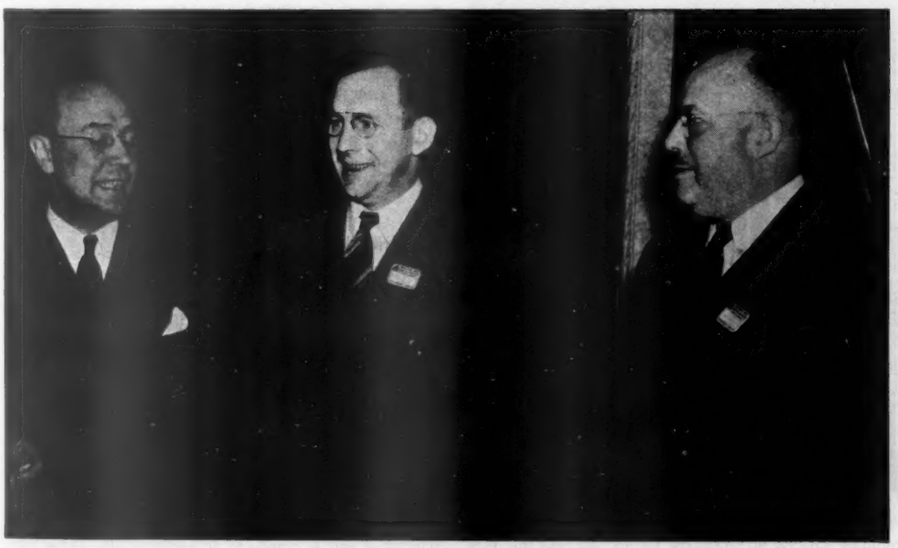
The greater optimism with which these members faced the future was based on these encouraging statements by speakers: That four of five motorists believe Pennsylvania oils are the best; that there is a vast American market that can and will pay the price for a superior oil; that the more Pennsylvania oils are investigated, the more they justify our faith in them; that the great buying power, resources and wealth of this nation assure a return to prosperity; that if the past is any guide to the future, the Pennsylvania industry will come through this depression.

It was Fayette B. Dow, general counsel, who assured his audience in the meeting's closing address, "You are justified in believing that if the past is any guide to the future, the Pennsylvania oil industry can come through this depression by facing its own facts with good business sense; that just as it has reduced prices, it can also enlarge its sales, encourage and increase its consumer demand in other ways; that sales promotion conducted by this association through cooperative advertising has proved its usefulness in broadening Pennsylvania's markets." He closed with a strong plea that "Today, perhaps more clearly than at any time in recent years, the situation calls for the support of all Pennsylvania producers, refiners and jobbers in the activities of this association."

Earlier in his talk, a considerable portion of which was devoted to a discussion of prices, Mr. Dow said that "the principle underlying those (antitrust) acts is that the free play of normal competition will result in price levels that are fair to the public, even though it may at times result in serious losses to those who produce and sell." This process is at work in the Pennsylvania industry, he said, pointing to the high degree of flexibility that has characterized this industry's crude and its products. "In fact," Mr. Dow asserted, "it has been the very great flexibility of Pennsylvania lubricating oil prices which has so often discouraged our jobber customers. They are often reported to have said that the frequent changes in price and in swings of price levels have made it difficult to make satisfactory commitments for the future. There can be no doubt," he continued, "that the very great flexibility of these prices has been a substantial handicap in distribution of oils."

In summing up Mr. Dow said: "It seems to me that in considering this whole subject, the industry may well remember that Pennsylvania Grade crude oil is important to the whole public; that the Pennsylvania industry involves the livelihood and welfare of many thousands of families; that important as has been the rejuvenation of the industry in the past, its continued maintenance on a sound basis is a matter not only of private but of public concern; that the small refiners of the region are the only immediate known market for the great part of the crude which is produced and that, therefore, any impairment of the strength of those refiners would be an impairment of the producers' market; that competitive products, made from cheaper crudes, are now brought to the Pennsylvania region itself and sold at prices lower than the cost of manufacture in this region; that in a depression period lubricating oils, both for industrial and motor uses, are far more seriously affected than gasoline; that the Pennsylvania oil industry, producing at costs which are necessarily high as compared with newer flush areas, must rely on quality, not on quantity; that the price record of the Pennsylvania oil industry shows it has met the test of price flexibility; that in reducing its prices to levels below the cost of production and manufacture it has extended genuine encouragement to the resumption of consumer demand."

P. H. Curry, president, South Penn Oil Co., and Fayette B. Dow, general counsel, Pennsylvania Grade Crude Oil Association



M. F. Clinger, president, Pennsylvania Grade Crude Oil Association; Wilmer Schuch, president, National Association of Petroleum Retailers, and J. E. Moorhead, executive secretary, Pennsylvania Grade Crude Oil Association

W. F. Clinger, president of the association, contrasted the position of the industry 15 years ago with that of today and declared "It seems to me that the job facing us in 1938 is not nearly so difficult as the task of 1923. Then it was a complex problem, capable of many solutions; now, as the result of 15 years pioneering, we know pretty well what is required of us and we know how to go about accomplishment."

Mr. Clinger also called for a continuation of the association advertising program. "It is my view

that we would be in a depression indeed if we had interrupted this consistent promotion of our oils at some time in the past. Our advertisements are mass salesmen who are persistently calling on 10,000,000 motorists month after month, reminding them of the intrinsic superiorities of our products. Certainly this is no time to call them in. I do not follow the logic that we ought to reduce our advertising because we are not selling as much as we used to sell. What we need is an expanded market and we can't possibly get it by contracting our selling efforts."

Calling on the "hitch-hikers," those who benefit from the association's work but do not support it, to do their part, Mr. Clinger asserted that if "we had every producer and refiner of Pennsylvania Grade crude in our fold it would mean a revenue,

Sam Messer, vice president, Quaker State Oil Refining Corp., and W. S. Zehrung, president, Pennzoil Co.

at the rate of a penny a barrel, of more than half a million dollars a year. It would make available an advertising appropriation that would put us so far in front of the parade that our competitors never could catch up to us."

"The Make-up of Lubricating Oils" was the topic discussed by Dr. F. L. Carnahan of the petroleum refining laboratory of Pennsylvania State College, who compared the viscosity, gravity, viscosity index and gravity index of various cuts of a Pennsylvania oil with cuts of a "commercial" oil obtained by vacuum fractionation; the molecular types in various oils; the viscosity, viscosity index, gravity and molecular types of cuts of a Pennsylvania neutral with cuts of a Mid-Continent neutral obtained by reflux extraction, and the high viscosity index constituents of Pensylvania neutrals with other neutrals. In his comparison of the vacuum fractionated cuts, Doctor Carnahan called attention to the high gravity, high viscosity index and high gravity index of Pennsylvania oil and contrasted it with the low values of the commercial oil. His comparison of molecular types revealed a higher ratio of paraffin side chains to cycloparaffin rings for Pennsylvania neutrals than for others. Similar data as in the previous comparisons was found in comparison of Pennsylvania with Mid-Continent neutral reflux extraction cuts. His comparison of high viscosity index constituents showed a content of 40 to 50 per cent, by weight, of constituents with a viscosity index of 120 or more for Pennsylvania neutrals in contrast to 0 to 10 per cent for others.

Regarding the importance of molecular types, Doctor Carnahan stated: "Just recently the results of Kadmer have indicated that the lubricating power of an oil is a function of the proportion of carbon chains to carbon rings. . . With oils matched in viscosity, it is stated that the difference in lubricating power appears to depend upon the chemical structure of the hydrocarbons. Quoting from the abstract: 'According to the data from testing with the Thoma machine, as a whole, the paraffin-rich mineral oils are better lubricants than aromatic oils; and there is an unmistakable relation between the coefficient of friction on one hand and specific gravity, refraction, aniline point and proportion of carbon rings to carbon chains, on the other'."

"It is thus evident," Doctor Carnahan concluded, "that the more thoroughly Pennsylvania oils are investigated, the more they justify our faith in them. When special oils are needed for purposes regarded today as unusual, Pennsylvania crude can furnish them." (The text of Doctor Carnahan's paper will be published in the June 30 issue of The Oil and Gas Journal.)

C. C. Parlin, of the Curtis Publishing Co., Philadelphia, assured members of the association that continuance of its present program would mean "another successful 15 years."

Mr. Parlin said: "You cannot possibly make money selling your oil on a price basis. You must create a market which is quality conscious. . . . There is a vast American market that can and will pay the price for a superior oil. . . . It is to that market that you can make your most effective appeal."

The amount of legislation affecting the oil industry which has been proposed during the past year and a half is "appalling," Warren C. Platt, publisher of National Petroleum News, Cleveland, declared in his address on "Legislation That Throttles Competition."

Harry G. Moock, vice president of Plymouth Motor Co., spoke optimistically of the business future, advancing the opinion that today's troubles are not much different from those of the past. Alluding to the current fear of business men, he described it as a "sickening, weakening thing. This situation calls for faith," he continued, "faith in ourselves, in our business and in our industry. I believe as dark as it may seem there is a brighter day ahead. We have great buying power, great resources, great wealth. We have something no one else on earth has, that is American character."

To show the trend toward lower prices in motor cars, Mr. Moock pointed out that 10 years ago the prices averaged $17.70 per horsepower against a current average of $8.40. He held that the opinion that motor car distribution had reached the saturation point was unfounded. Constantly changing styles effect a new demand, and that the improved vehicular systems tend to increase the demand for automobiles. "The problem," he said, "is not overproduction but underselling."

John Toigo of Chicago, of the advertising firm of Batten, Barton, Durstine & Osborn, discussed the possibility of applying engineering principles

C. L. Suhr, chairman, Pennzoil Co., Oil City, and Otto Koch, president, Kendall Refining Co., Bradford, exchange views

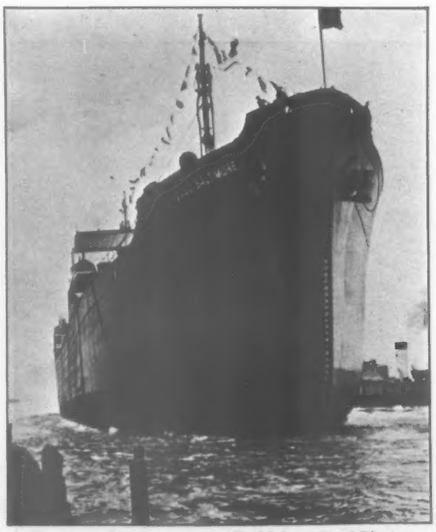
to selling motor oils. Contrasting the absence of a uniform technique in selling with the orderly progress and standardization of production, he said the former has been allowed to depend too much "on hunch, too much on intuition, too much on psychology, instead of operating on a sound, scientific basis."

The current geological survey of the older Pennsylvania oil fields and its significance in the light of future oil production were discussed in papers prepared for the meeting by Dr. Richard E. Sherrill of the University of Pittsburgh and C. B. McClintock, geologist and petroleum engineer, Oil City. The unavoidable absence of the authors eliminated these papers from the program.

Doctor Sherrill's paper described the survey and Mr. McClintock the great need for such a survey and what it may mean to future recovery. "In this area we have some 450 different oil fields which go to make up the 1,284,000 acres of oil-producing territory," Mr. McClintock's paper read. "These 450 fields show an estimated potential oil reserve of 5,500,000,000 bbls. . . . This large reserve is contained in some 56 different producing sands which vary in depth from 100 to 4,000 feet. That gives some idea of the magnitude of the picture. It should be evident there is a great deal to be learned about the underground picture."

Clarendon E. Streeter and A. E. Booth of Bradford, and Otto Walchli of Wellsville, N. Y., replaced Fayette B. Dow of Washington, George Bovaird, Jr., of Bradford, and D. J. Sweeney of Buffalo on the board of directors, the other 26 directors being reelected.

"ESSO BALTIMORE" LAUNCHED



Bethlehem Steel Photo

The "Esso Baltimore," built by the Bethlehem Shipbuilding Co. for Standard Oil Co. (N. J.) was the 43rd tanker and the 319th vessel built at Sparrows Point, Md. The crew of 11 officers and 36 men is housed in 18 rooms with every convenience. The vessel will carry 106,400 bbls of oil, loaded or unloaded in 12 hours.

National Stripper Well Association Meeting

The National Stripper Well Association will hold its annual meeting in Tulsa, Tuesday, October 18, it was announced by W. W. Warner, Nowata, Okla., president. The national association is composed of local, state, and area associations in Illinois, Kansas, Michigan, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, and Texas. In addition to Mr. Warner as president, the executive officers are Harold B. Fell, executive vice president, and Howard J. Whitehill, secretary-treasurer.

The Oklahoma Stripper Well Association will hold its annual meeting on the same day in Tulsa. Mr. Warner is also president of this association. These two meetings will immediately precede the ninth annual meeting of the Independent Petroleum Association of America, which will be held at Tulsa, October 19, 20, and 21.

Kentucky Oil Men Find Profit From Orderly Production

LEXINGTON, Ky., June 18.—A general satisfaction with conditions in the industry in Kentucky, especially in the light of less favorable situations in certain other states, was the keynote of the annual meeting of the Kentucky Oil and Gas Association, which ended tonight with the annual dinner at the Ashland Golf Club.

The 200 delegates were warned, however, that overproduction and disorderly marketing in one

Judge S. S. Yantis, Lexington, presided as toastmaster, and Paul G. Blazer, Ashland, Ky., a speaker at the dinner

field eventually must have a depressing effect on other fields. Russell B. Brown, Washington, D. C., general counsel of the Independent Petroleum Association of America, the principal speaker at the dinner, cautioned the oil men to take steps to solve their problems among themselves lest they create a situation leading to federal control.

"The best way to avoid excessive government control is to conduct our own business so as to make it unpopular to interfere with it," Mr. Brown said. "We should be able to do this through the medium of the Interstate Oil Compact."

Mr. Brown said Kentucky producers had acted wisely in avoiding overproduction and maintaining an orderly market. He praised the Kentucky Oil and Gas Association officers and members, and particularly President Earl D. Wallace, Lexington, for excellent cooperation in all movements for the good of the industry.

Paul G. Blazer, Ashland, Ky., president of the Ashland Refining Co., was another speaker who had words of praise for Wallace and his associates, who he said had put new life into the state association.

Mr. Blazer gave an optimistic report on conditions in the Eastern Kentucky field, in which his company maintains more than 800 miles of pipe lines conected with almost 6,000 oil wells in 13 counties. His company's business is 33 per cent ahead of that of last year, he said. "We put pressure on our sales force to expand the market because we could foresee increased production," he said. "Fortunately, sales are keeping up with production, and recently we have been able to reduce the amount of oil in storage, in spite of the fact production in the Eastern Kentucky field is approximately 1,000 bbls. a day more than was being produced a few years ago. I believe Kentucky crude prices can be maintained, provided no one rocks the boat."

Asphalt Aids

Mr. Blazer said a good market within the state for asphalt had aided in maintaining Kentucky crude prices. Ready sales of this by-product have made Kentucky crude bring 25 cents a barrel more than it would have brought otherwise, he estimated. The present state administration has cooperated with the oil men by making use of that paving material, he said. Further, Kentucky oil men have not been harassed by excessive state taxation as have those of certain other states, he declared.

Lieutenant Governor Keen Johnson of Kentucky, who attended the dinner as a representative of the state government, in turn complimented the oil men on their attitude toward legislative and administrative matters. He said representatives of the Kentucky Oil and Gas Association had not gone to the state capital to make any excessive demands, but merely reasonable requests.

W. Chapman Revercomb, Charleston, W. Va., president of the bar association of Charleston and a lawyer who has had wide experience in the natural gas field, spoke at the dinner on "Some of the Legal Aspects of Natural Gas Development." He stressed the importance of friendly relations between producers and landowners, which he said could be assured by straightforward dealing, particularly in the making of leases.

"A good lease man," he declared, "must be possessed of facility and diplomacy, but it is of equal importance that he be a clean, straight dealer. Statements of a misleading nature made at the time a lease is executed, even if they are oral and not incorporated in the contract, are certain to rise to plague the operator if the lease becomes valuable. Of course, it is not until a lease becomes valuable that you have any trouble over it."

Mr. Revercomb made a plea for freedom of enterprise in the oil and gas industry. "More regulation will mean less opportunity for you," he said. "It has been only through freedom of enterprise heretofore allowed you that you have been able to develop your industry to its present importance. There ought to be greater liberty in an enterprise as adventurous as yours than in industries in which no such great risks are taken."

Judge S. S. Yantis, Lexington, presided as toastmaster at the dinner. Mayor E. Reed Wilson of Lexington welcomed the association.

The day's program opened with registration at the Lafayette Hotel from 10 to 11:30 o'clock. At noon the members were taken to Lake Ellerslie for a burgoo lunch. The afternoon offered alternatives of golf or a trip to see "Man o' War."

Kansas Oil Scouts Frolic

The Kansas Oil Scouts Association will hold its annual frolic at Wichita on Friday, June 24. Arrangements are in charge of Jack Revel, of Gulf Oil Corp.: Jack Lander, of Pure Oil Co., and Jim Noel, of Atlantic Refining Co.

Lynn Lee, geologist of Pure Oil Co., Illinois operations, with Earl D. Wallace, Lexington, Ky., president, Kentucky Oil & Gas Association, and R. W. McIlvain, Jr., general manager of the Illinois operations of Pure Oil Co.

Deep Producer Championship Passes to Louisiana

By NEIL WILLIAMS

HOUSTON, Tex., June 20.—Distinction of being the world's deepest producing well Saturday passed from Continental Oil Co. No. 2-A KCL, in Kern County, California, to Fohs Oil Co. No. 1 Buckley-Bourg, an isolated wildcat test in the tidal marsh area of Terrebonne Parish, southeastern Louisiana. Flowing from a total depth of 13,266 feet, the Fohs well is 96 feet deeper than the Continental well, which is producing from a horizon between 13,085 and 13,170 feet.

The Fohs well not only sets a new world's record for deep production but, as a wildcat, opens another field for Coastal Louisiana, the ninth this year. Although no official gauge of production has been made, the well is flowing a substantial volume of light gravity distillate oil through an eighth-inch choke on the 2½-inch tubing, with about 1,000,000 feet of gas daily. With this, working pressure on the tubing is 4,000 pounds, while casing pressure is 1,000 pounds.

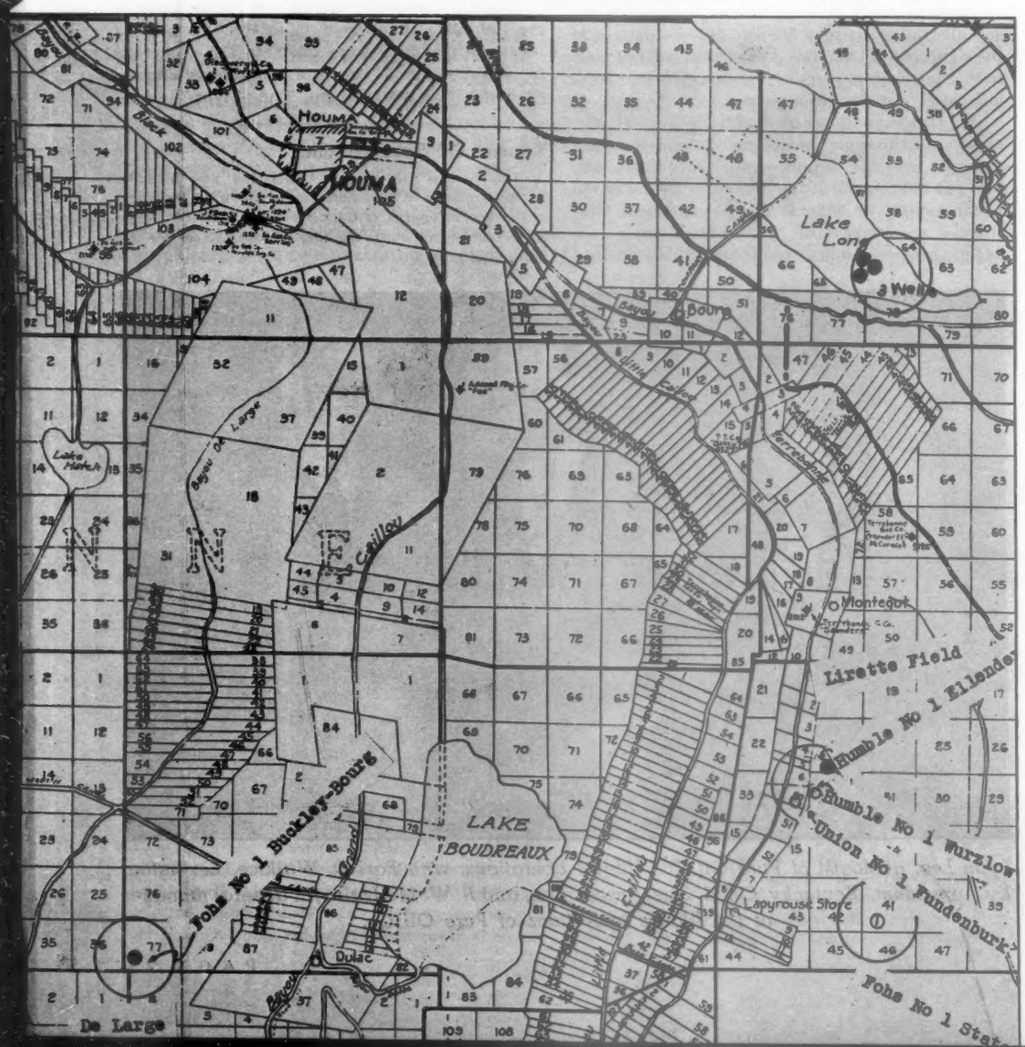
The well is in section 77-19s17e, about 20 miles south and slightly west of Houma, and about 80 miles southwest of New Orleans. This first test on the prospect was drilled on the strength of geophysical work showing indications of a deeply seated salt dome or structure.

Drilled to a total depth of 13,333 feet, the well lacks 1,671 feet of equaling the total depth of the Continental well, which went to 15,004 feet before being completed at its present producing depth. However, it is the second deepest hole ever drilled, and as another point of distinction it is the deepest hole ever drilled with a drilling barge.

At no time during drilling did the operators foster any intention of setting any records. Drilling was carried on solely in exploration for possible productive horizons, and in the absence of any major mechanical trouble the hole reached its present level, where it was decided to test the sands already encountered. It is reported a number of other sands showing oil or gas were passed up. Despite the depth, the present producing horizon is believed to be still in the Miocene, or at best not much below the top of the Oligocene.

Fohs Oil Co. field office and warehouse on Intercoastal Canal, near Houma, La.

Location of three deep development projects, DeLarge, Lake Long and Bay Baptiste (also Lirette field). Fohs No. 1 Buckley-Bourg in lower left corner



Located in a tidal marsh area, the well is inaccessible by land and is reached only through a 4-mile canal which the company dredged from a point near the settlement of Dulac, on Bayou Grand Caillou. Supplies and equipment can be trucked to Dulac, which is on an all-weather road out of Houma, but Bayou Grand Caillou is linked with the intricate network of navigable waterways which serve southeastern Louisiana and provide a water route for barges and other shallow draft to operating centers by way of the Intercoastal Canal.

Drilling was started early this year. With conductor pipe set through the upper surface formations, the hole was drilled to 3,250 feet, where the first string of surface casing, consisting of 13⅜-inch pipe, was cemented. Open hole was carried 6,386 feet to a total depth of 9,636 feet, where a protection string of 9⅝-inch casing was run. At 11,656 feet an additional string of 7-inch casing was cemented, and 6½-inch hole was drilled to the total depth.

Cementing

For completion 1,957 feet of 5-inch liner was cemented at a bottom depth of 13,301 feet, extending 312 feet up the 7-inch casing. To insure adequate cementing the upper portion of the 5-inch liner was perforated, and the cement was pumped in between the 5-inch and the 7-inch casing strings. After setting of the cement the 5-inch liner was perforated with 20 shots in the productive horizon at 13,254-66 feet. A string of 2½-inch tubing with perforated nipple on bottom was run, and after the hole was washed a short time the well started flowing.

The 9⅝-inch casing, cemented at 9,636 feet, was one of the longest and heaviest strings of pipe of that size ever run. Total weight was calculated at 440,000 pounds. At the same time, more than 12,000 feet of 4-inch drill pipe was stacked in the derrick, which made a total pipe

Lake Long field drilling well at left

load of 750,000 pounds, not to mention the weight of the drilling equipment, supported by the drilling barge. Only a trivial settling was noticed.

Entire acreage around the well is owned and controlled by Fohs Oil Co. and various Fohs interests, with an undivided 75 per cent interest in the project being held by various Fohs interests, 16⅝ per cent by Fohs Oil Co., and the remaining 8⅛ per cent by Foray Petroleum, Inc., a Julius Fohs holding. All development is being carried on by Fohs Oil Co., with the discovery well being drilled under contract by Loffland Brothers of Tulsa and Houston.

This is one of three deep development projects within an airline radius of 15 miles of each other being carried on simultaneously by Fohs Oil Co. and associated interests. At Lake Long, on the Terrebonne-Lafourche Parish line, about 15 miles north and slightly east of the DeLarge area, where the deep well has been completed, three deep producing wells already have been completed without a failure. The third project is at Bay Baptiste, about 12 miles south of Lake Long and about 15 miles east of DeLarge, where the company's first test is drilling. This test at latest report was making hole below 12,620 feet after cementing a protection string of 7-inch casing at 12,215 feet. The latter test holds the distinction of being the deepest test ever drilled from piling foundations. A drilling barge also is being used at Lake Long.

Lake Long and Bay Baptiste

Like DeLarge, where the deep well was drilled, the Lake Long and Bay Baptiste blocks are in isolated marshes, inaccessible by land and necessitating all operations being carried on by water. The operations are handled out of a central operating point, on the Intercoastal Canal, about 12 miles east of Houma, by road. Here are located the company's warehouse, boat docks, pipe racks, and storage for production piped from the Lake Long field, 4 miles distant. A 6-inch oil line and a 4-inch gas line have been laid across the marshes from the field. This is the nearest access by road to Lake Long. Pipe and other equipment can be barged direct to this point from eastern mills and plants by way of the Ohio and Mississippi rivers to New Orleans, and by way of the Intercoastal Canal the remainder of the distance. The Intercoastal Canal also furnishes a water route for movement of the oil produced, either to terminals on the Mississippi River, or to the Beaumont-Port Arthur and Houston, Tex., refineries and terminals. Through various canals and other waterways, each of the three development projects is accessible by boat and barge to the operating center.

Access to the Lake Long field, which is about 2 miles in the marshes from the Intercoastal Canal, is obtained through a private canal, 50 feet wide and 7 feet deep, dredged to the discovery well when the development project was undertaken. A system of canals will be dredged as needed to link the various locations.

Production at Lake Long is being obtained at present from two horizons, one a 9,300-9,400-foot sand in which the first two wells were completed, and the other below 10,400 feet, in which the third well has just been completed. Several other sands showing oil have been passed up, offering potentialities for later development.

Discovery Well

The discovery well was completed June 22, 1937. Taking in only 8 feet of the sand section at 9,365-73 feet, producing through perforations in the casing at that level, the well flowed initially 475 bbls. of pipe line oil in 24 hours through a 12/64-inch choke with working pressure of 1,350 pounds on the tubing. The second well, completed early this year, was first drilled to a total depth of 11,345 feet for exploratory purposes, and was plugged back to the discovery well sand, in which it was perforated at 9,376-82 feet, flowing 416 bbls. in 24 hours through a 12/67-inch choke. The third well, which opens the 10,000-foot production, drilled to 10,437 feet. Seven-inch casing was cemented at 10,239 feet, and 5-inch liner to bottom. The liner was perforated at 10,416-19 feet for the completion.

Lake Long and the new DeLarge field, where the record well has been completed, comprise two of the six fields in Coastal Louisiana with production from sands below 10,000 feet. The others are Horseshoe Bayou and Bateman Lake in St. Mary Parish; Lafitte, Jefferson Parish, and Lirette, Terrebonne Parish.

A conservative, consistent development program is being carried out at Lake Long, as will be done in the new DeLarge field. Fohs Oil Co. and the Pilgrim Exploration Co., jointly control practically all of what is expected will prove the productive area, their block comprising more than 5,000 acres. As most of the block consists of state leases, taking in the bed of Lake Long, competitive drilling is eliminated. The program calls for drilling only one well to each 40 acres, uniformly spaced. At this time only one rig is running.

Drilling at Long Lake is being done under contract by Cron & Gracey, who own the drilling equipment, which is mounted on barges owned by Fohs Oil Co.

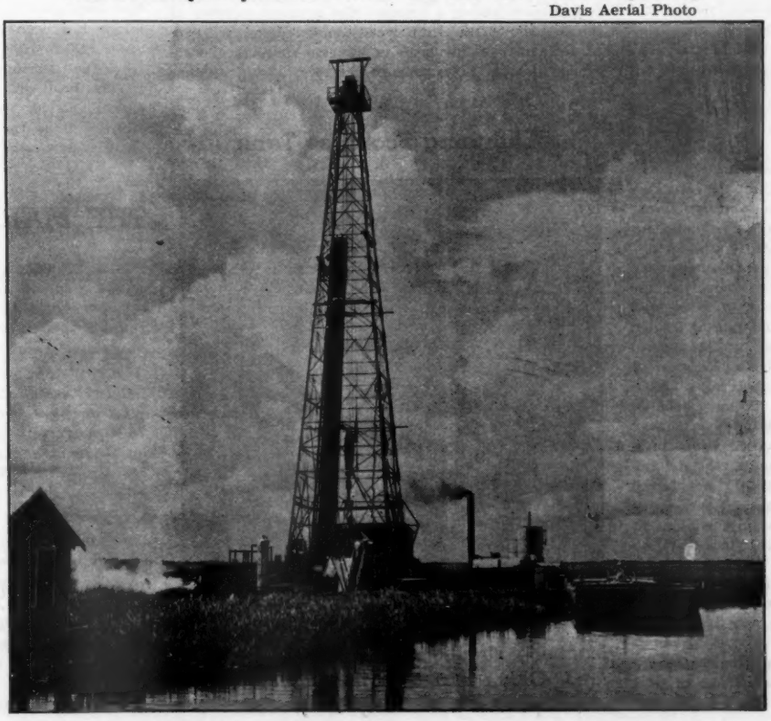
Lake Long Production

Although production from the new 10,000-foot sand at Lake Long so far is showing only distillate and gas, the oil from the 9,300-foot sand of the first two wells is of particularly desirable characteristics. It is 38.5-gravity, and on straight distillation yields about 19.5 per cent gasoline, 24 per cent kerosene, 28 per cent gas oil and fuel, and 27½ per cent paraffinic lubricating oil stock.

The Bay Baptiste deep test is about 3 miles southeast of the Lirette area, where Humble Oil & Refining Co. has a deep distillate producer, No. 1 Ellender, originally completed about a year ago in sand at 11,620-30 feet (total depth of hole is 12,168 feet) at the time the deepest producer in the world. Due to encroachment of water it was plugged back to slightly shallower sands around 10,000 feet. Two additional tests are drilling at Lirette, within sight of the Bay Baptiste test. The Fohs block is being drilled as a prospect separate from Lirette field, although it is possible the two areas may be related. In the Bay Baptiste block, Fohs Oil Co. holds 50 per cent interest and DeLarge Oil Co. and Foray Petroleum, Inc., 25 per cent each.

World's deepest producer—Fohs Oil Co. No. 1 Buckley-Bourg

Davis Aerial Photo



Cost of Government In Oklahoma

A dinner meeting of the Petroleum Industry Tax Representatives, Kansas-Oklahoma area, will be held at 6:30 p.m. on Friday, June 24, at the Junior Ballroom of the Hotel Mayo, Tulsa. Leon F. Booth, Selby Oil & Gas Co., Tulsa, will preside.

Dr. J. M. Ashton, of Oklahoma City, research director for the Oklahoma State Chamber of Commerce, will speak on the general subject of the cost of government in Oklahoma, with special reference to the ad valorem tax revenues of the local jurisdiction and the present trends of ad valorem assessment and taxation.

Government Claims Ethyl Corp. Jobber Contracts Unlawful

NEW YORK, June 21.—The right of Ethyl Gasoline Corp. to license jobbers—a practice the government contends is in restraint of trade and a violation of the Sherman act—was argued June 16 and 17 in the District Court of the United States for the southern district of New York.

Issues in the suit were taken under advisement by Federal District Judge William Bondy. The government reserved approximately two weeks in which to prepare its brief and defendants were allotted approximately two weeks longer for review and preparation of an answer.

The case was presented by stipulation in which the history of the defendant corporation was reviewed, and the practices complained of by the government were set out. The stipulation explained the defendant's reasons for extending its licensing system to the jobbers.

The government counsel table in New York federal court last week reminded some observers of the line-up during the Madison antitrust suit last winter. John Henry Lewin, Hammond E. Chaffetz, W. B. Watson Snyder and Grant W. Kelleher, special assistants to the attorney general, conducted the government's activity with Lewin and Chaffetz arguing the issues and contending vigorously that the corporation exercises unlawful influence on prices by means of licensing jobbers.

In direct argument and later by interpolated remarks during the address by defendants' counsel, Mr. Lewin and Mr. Chaffetz contended that the "business ethics" of jobber applicants exerted primary influence in the decision to license or refuse license by Ethyl Gasoline Corp. and its officers, Earle W. Webb, president, and John Coard Taylor, vice president, who are defendants in the action along with the corporation.

Drury W. Cooper, New York, and Harold W. Norman, Chicago, of counsel for the defendants, argued that it was essential to the preservation of good will and quality of products to maintain contractural relationship with jobbers as well as with refiners.

Attention was called to the voluntary discontinuance of the sale of tetraethyl lead fluid on May 5, 1925, following a period of more than two years of business activity in which several serious cases of lead poisoning occurred in the manufacture of the concentrated fluid. During that two-year period, the stipulation relates, more than 300,000,000 gallons of leaded gasoline had been sold. Certain of the cases of lead poisoning achieved wide newspaper publicity in which no distinction was made between the manufacturing hazard and the possibility of public health hazard which might exist in the use of treated gasoline.

Following an extensive study, defendants' counsel argued, the surgeon general of the United States Public Health Service, incorporating recommendations by an impartial committee, stipulated a set of rules for the handling of tetraethyl lead-treated gasoline.

Defendants contend that under the surgeon general's proposal that certain regulations covering the manufacture, shipment and handling of tetraethyl lead and fluid, and the distribution and sale of treated gasoline be adopted and promulgated by the several states and municipalities of the United States, it became necessary to assume a contractural relationship with jobbers as well as refiners. To have licensed jobbers promiscuously, defendants claim, would have risked another loss of good will which came to a complete standstill in 1925. Furthermore, the defendants argued, shipment of gasoline from refineries to jobbers in bulk, as is commonly practiced, presented the opportunity for adulteration between the point of bulk plant delivery and the service station pump without a contractural relationship. The loss of good will through this channel alone was contended by the corporation to be sufficient justification for licensing jobbers and thereby retaining control over its patented product.

Mr. Cooper argued that regulation among jobbers is essential to preserve the quality and effect of lead treated gasoline, pointing out that if such motor fuel is held in storage for excessive periods deterioration is inevitable. It was later developed that investigation by field representatives of Ethyl Gasoline Corp. included a check of physical facilities and gallonage of jobber license applicants to determine whether their volume of business was such as to make improbable long periods of gasoline storage.

In investigating applications for jobber licenses, field representatives of the defendant corporation are required to set forth their findings on a blank form including name, source of supply, location, number and general condition of bulk plants and outlets and until 1935 a statement on business ethics of the applicant. Since 1935 the report forms have not contained the question of business ethics which the government contended was the chief determining factor in approval or disapproval of the license. Broad discretionary powers rest in the field representatives and their district managers and, it was contended by defendants, their recommendations were usually accepted in the New York office where final decision rests.

Mr. Chaffetz and Mr. Lewin contended that the deletion of the question on business ethics was ipso facto evidence that defendants feared this clause was price fixing in nature and in fact. It was contended by the government that usually this question of business ethics was answered simply "yes," "no," or "questionable." Much issue was made of the allegation that rarely was a reason assigned to refusal by the corporation to grant or renew a license, and that the only permanent record maintained by the corporation is the field representative report form.

It was brought out that approximately 11,000 jobbers out of 12,000 in the country were licensed by the Ethyl Gasoline Corp. It was also shown that approximately 123 refiners were licensees, leaving only one integrated oil company, the Sun Oil Co., that does not use tetraethyl lead.

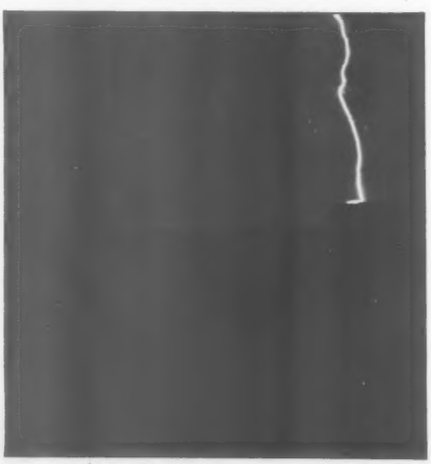
Despite deletion of the report question directly related to "business ethics" of the applicant for a license, the government contended that it had remained among the principal subjects of investigation and that the findings of the field representatives with respect thereto were incorporated in the recommendations. An adverse finding upon the business ethics of a prospective jobber licensee is alone in many instances sufficient ground for defendant corporation to refuse such jobber a license. The greatest number of jobber applicants who were denied licenses were turned down on the basis of adverse findings of field representatives as to "business ethics." In a number of instances where licenses were granted to jobbers whose practices were previously considered unsatisfactory, they were granted after representation that the jobber's marketing practices would be changed. In at least an equal number of instances licenses were refused by defendants after similar representation, it was contended by the government.

"Testimony of witnesses for the government," relates a paragraph of the stipulation, "would tend to establish that a large number of refiners and a majority of jobbers believe that a jobber must maintain 'business ethics' in order to obtain a license, and that a number of jobbers believe that jobber licensees are required to maintain the prices and abide by the marketing practices and polices of the major oil companies. Defendants have not issued any statement or instructions to the effect that they would cancel licenses for such reason, and there has been and is a great deal of cutting of prices below the posted prices on the part of licensed refiners, including major oil companies, and licensed jobbers." In the government's argument, it was contended that disciplinary action by the corporation usually was applied to price-cutting jobbers when their licenses came up for renewal.

Right of the defendant corporation to extend its regulation over the use of tetraethyl fluid was compared by Mr. Norman to decisions in Coca Cola litigation. The bottlers who purchase Coca Cola syrup or fluid from the company were compared to motor fuel jobbers. The Coca Cola company's right to stipulate how its patented product may be used in combination with carbonized water has been clearly defined by the courts, Mr. Norman said.

Government counsel held up the General Electric case as an example of its contention that the right to regulate price of a patented product ended with its first sale. It was contended by Mr. Chaffetz that sale of the tetraethyl fluid to the refiners should, therefore, conclude the defendants' exercise of control over prices.

Lightning Scorches Tank



Lightning striking storage tank near Marland, Okla., burned off paint on top and passed harmlessly to ground

Stanolind Oil Purchasing Co. Will Succeed SCOP in Texas

To simplify and localize crude purchasing operations in the Gulf Coast states, Standard Oil Co. of Indiana has organized a new subsidiary, the Stanolind Oil Purchasing Co. The new company will acquire the oil in storage and other physical facilities of the Stanolind Crude Oil Purchasing Co. now in the state of Texas. Thereafter it will purchase oil from the Stanolind connections and otherwise carry on the business which has been handled by SCOP in the Gulf states area. SCOP will discharge all obligations and retire from that territory.

The head office of the new company is to be at Tulsa, and its Texas office will be at Houston. Officers will be the same as SCOP, with R. S. Ellison as president, and Ralph O. Dietler as vice president.

THE MARKETS*

CRUDE OIL: *Kansas refiner who in May reduced posted crude oil schedules 25 cents per barrel advances schedules 10 cents per barrel. Change has no significance as his 25-cent reduction was not met by other buyers in Kansas. General crude market unchanged.*

REFINERY: *Tankcar gasoline prices higher in Ohio following steady advances in Mid-Continent and Middle West over past month. Gasoline shipments heavy and market generally firm. Bunker fuels reduced 10 cents per barrel among Atlantic seaboard and 5-cent reduction effective at Gulf Coast points. No important changes in other products.*

TANK-WAGON AND POSTED DEALER: *Posted dealer prices for third-grade gasoline reduced 2 cents in Chicago. Minor changes elsewhere.*

FINANCIAL: *Oil equities held up well during an inactive market. Average of 30 representative stocks for week ending June 18: High, 26.04; low, 25.05; close, 25.62. Week ending June 11: High, 26.39, low, 25.12; close, 25.87.*

**Detailed information in market section.*

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Main Storage

Current interest being manifested in the comparative figures of gasoline stocks and other storage in the industry indicate the necessity of keeping in mind that 96 per cent of our known inventory is underground while only 4 per cent is aboveground in steel and concrete storage.

While fluctuations in this 4 per cent do have bearings on the current price movement, the control of the 96 per cent will determine the ups and downs of the industry in the future.

Summarizing the figures, we now have approximately 15 billion barrels of proved oil reserves scattered over 19 states. Aboveground throughout the entire United States there is something less than 600,000,000 barrels of all oils, divided about equally between crude oil and finished products.

Indicative of the growing importance of the underground reserves and the decreasing significance given to aboveground stocks, the known reserves have tripled since 1925, with stocks aboveground only slightly larger than they were then.

This has been the natural development of fundamental changes in the industry's exploration and producing methods, coupled with the adoption of conservation regulations.

As the industry commenced to accumulate storage in structures found beneath the surface it required less oil aboveground and the rise and fall of crude storage ceased to be the barometer of price trends that it was for many years.

Right now gasoline stocks are several million barrels greater than they should be with still larger surpluses of fuel oil and gas oil. They are in the tanks because last year and early this year withdrawals from the underground reserves came at too rapid a rate. These surpluses reflect effects of unsound operations. The causes must be remedied before the effects can be changed.

So far as these stocks in tankage are concerned it is reasonably certain that fluctuations in the future will be small. Stocks of refined products are not far from minimum working requirements. The same situation applies to crude oil inventories now 125,000,000 barrels less than they were a few years ago.

In the meanwhile additions are being made steadily to the underground storage. A few wildcat discoveries in scattered sections of the oil country can easily add more than 100,000,000 barrels to our known oil supplies. As these supplies increase there is more and more pressure to increase production in excess of current needs.

The industry needs to look at this tremendous reserve as being tapped by 350,000 well connections. Some are capable of producing only a few gallons daily while a few at least could flow several thousand barrels daily for an indefinite period.

What happens to the industry the remainder of this year, next year and the years to come, will be entirely dependent on how it adds to and subtracts from this reservoir representing 10 or more years' supply.

Control of withdrawals from these reserves rests with the oil producing states backed by state conservation acts and aided by the Interstate Oil Compact. These states must exercise their authority fairly and equitably, realizing that state lines are of no fundamental significance in the production and transportation of crude oil and its products.

Too rapid withdrawals will mean that more oil will go into aboveground storage in excess of working requirements, resulting in too much gasoline, too much fuel oil and too much crude oil.

Congressional Action on Oil and Gas Measures

WASHINGTON, D. C., June 20.—A great deal of legislation of vital importance to the oil and gas industries and to business generally was considered and much of it enacted by the third session of the 75th congress which ran from January 3 to June 16.

Although, like the two preceding sessions, it was marked by a revolt against White House dictation and for a while appeared to be a "do nothing" session, the final calendar shows much was accomplished and many measures pending for years were enacted.

Of particular interest to the oil and gas industries were the pollution bill, the Lea natural gas regulation bill, and the tax revision bill, all of which became law. Among the measures discussed but which failed of enactment were the Gillette-Bierman proposal to divorce marketing from other branches of the oil industry, the Boland bill to place a tax on fuel oil, the treasury's request that mineral depletion allowances be treated as a "tax loop-hole" and be outlawed, various proposals to subsidize the use of power alcohol in motor fuel, the fight over submerged oil lands, and consolidation of naval petroleum reserves. Among minor measures enacted was a bill permitting the registration of collective trade marks owned by trade associations and cooperatives, a bill particularly sought by the Pennsylvania Grade Crude Oil Association.

Helium

Congress provided $537,975.23 for purchase of the Girdler Corp. helium properties at Thatcher, Colo., and Dexter, Kans. This completed congressional action on the helium project begun last summer when the law was enacted making the sale of helium a government monopoly and stipulating that all helium producing properties in private hands should be bought by the federal government. The item was contained in the second deficiency appropriation bill approved by congress on the last day of the session.

Submerged Oil Lands

The protests of California interests were successful in sidetracking the senate resolution which early in the spring threatened private ownership of submerged oil lands along the coasts within the 3-mile limit. The resolution, introduced by Senator Nye, passed the senate last summer in a form which would have directed the attorney general to institute proceedings for establishing the title of the United States to submerged lands within the 3-mile limit along its coasts and to petroleum deposits contained in them.

Gillette Bill

The bill to divorce marketing from other branches of the petroleum industry never got out of the senate judiciary committee. It was introduced by Senator Guy M. Gillette of Iowa and declared it to be unlawful for any person to be engaged in marketing refined petroleum products while at the same time engaged in production, refining, or transportation. A subcommittee held hearings, which brought out that the measure was a very controversial one, and the committee failed to report it to the senate.

New Tax Law

The 1939 revenue law is important to the oil industry for what it omitted as well as for what it contained. Of great interest to the industry was the attempt to place in the bill a provision for a tax of 1 cent per gallon on fuel oil used for heating. After failing in the attempt to have the ways and means committee put the provision in the bill, Representatives J. Harold Flannery and Patrick J. Boland of Pennsylvania made a determined effort to induce the house to adopt such an amendment when the bill was discussed on the floor.

A second amendment which was lost on the floor of the house would have exempted from the 1 cent per gallon federal gasoline tax motor fuel mixed with 10 per cent or more of anhydrous ethyl alcohol produced from annual agricultural crops grown in the continental United States.

The law as finally enacted continued in effect until June 30, 1939, the federal gasoline tax and made no changes in mineral depletion allowances, nor in the taxation of income from mineral, oil or gas royalties. It repealed, as of June 30, 1938, the so-called "hot" oil taxes on production of crude petroleum, petroleum refining, and gasoline recovered from natural gas, which under previous revenue laws called for a levy of 1/25 of a cent per gallon.

On the closing day of the session congress completed action on a bill to permit the navy department to consolidate its petroleum reserves Nos. 1 and 2 in Kern County, California, through exchange of lands or by purchase.

Among the important business measures which failed in the final days of the session was a bill to tighten up the Walsh-Healey government contracts act in many respects, particularly by applying the wage and hour stipulations to all contracts above $2,000, instead of $10,000 as at present and to make these apply also to subcontractors, and to create a "blacklist" of firms ineligible for government contracts of any sort to include all concerns violating either the Walsh-Healey act or the Wagner labor relations act. This measure passed the senate and a similar bill was reported by the house judiciary committee but this committee refused to substitute on the calendar the senate-approved draft and the rules committee refused to permit it to come up.

Wage-Hour Law

The wage-hour law sent to the President last week is the survivor of the original Black-Connery bill but in a totally different form.

The oil industry as a whole probably will not be much affected by the wage provisions and only certain branches by the hours sections. Minimum wages must be 25 cents per hour the first year the act is in effect, 30 cents the next six years, and 40 cents thereafter. In the meantime industry committees, appointed by and working under the general direction of the administrator of the act, will be set up with instructions to fix higher minimum wages for various sections of industry, but wages so fixed cannot be less than 30 cents per hour nor more than 40 cents minimum. The work week is limited to 44 hours the first year, 42 hours the second, and 40 hours thereafter, and overtime must be paid for at 1½ times the hourly wage. Neither the industry committee nor the administrator will have any power to alter the hours provisions.

STATE CAPITALS

TEXAS

AT THE STATEWIDE HEARING in Austin on Monday, June 20, the operators of Texas, without exception, asked the railroad commission to continue strict curtailment of production, not only through the month of July, but throughout the entire summer. This they considered necessary in order to permit a substantial reduction of stocks through the peak season of consumption, and enable the industry to enter the fall and winter of 1938 on a firm foundation. These requests were made even in the face of the previous announcements by officials of the commission that the Saturday and Sunday shutdowns would be abolished effective July 1. After unanimously reaching this decision, wide varieties of opinion were advanced as to how this continued production control should be accomplished.

The Bureau of Mines' July forecast was announced at the hearing as 1,360,300 bbls., or an increase of 31,000 bbls. per day over June. Should the two-day shutdowns be abolished, and no cutback made in the basic allowables, Texas would then produce about 400,000 bbls. per day over June, and 238,485 bbls. per day over the predicted market demand. Should only the Saturday shutdown be discontinued, and no adjustment made in the basic allowables, Texas would still produce about 200,000 bbls. daily in excess of June.

If the commission heeds the pleas from what appears to be a great majority of Texas producers, they will adhere closely to the present permissible allowable of around 1,200,000 bbls. daily. This can be done in two ways: by a continuation of the holiday method, or by a very radical readjustment of field allowables in order to reduce the state's basic some 400,000 bbls. daily.

Obviously, by restoring the normal seven-day proration schedule, the East Texas field will profit at the expense of all other sections of the state. A representative of a group of business men and civic organizations in the East Texas district presented a petition to the commission (signed by some 8,500 voters) asking for immediate restoration of the seven-day production schedule. The basis for this request was that the East Texas field is justly entitled to a greater share of the state's production than it has been getting under the present form of restriction. During April the East Texas field produced 13,032,000 bbls. of the 40,246,-154 bbls. total production of the state, or 32.4 per cent. Its proportion of the state's total 1937 production was 33.1 per cent. By the restoration of the full operating schedule, the field's production would rise to the basic allowable of 510,541 bbls., or almost 50 per cent of the state's present actual production of 1,196,586 bbls.

As a solution to the problem, the representative of the East Texas group suggested that the present approximately 79,000 producing wells in Texas be prorated upon their irreducible marginal allowable as set by statute. After this is done, they estimate that approximately 60,000 bbls. would remain as proratable oil, which could be allocated to certain oil fields where it was deemed necessary for the prevention of waste.

In discussing the merits of Saturday-Sunday shutdowns, the question arose as to whether or not the practice was causing any hardships to oil field labor as a result of layoffs or pay reductions. During this election year in Texas the accusation has been made that the officials of the commission were responsible for this supposed injury to labor. At the suggestion of Harold Neely, representing the West Central Oil and Gas Association, the entire group at the hearing rose in a vote of confidence in the commission in signifying that they did not consider it doing anything injurious to labor by its emergency proration measures. In fact, it was impressively pointed out that the only thing that would seriously affect oil field workers would be a cut in the price of crude oil, which may have been averted by the shutdown practice.

AS SUBSTANTIAL PROOF of the wisdom contained in the recent restricted production policy in the East Texas field, V. E. Cottingham, director of production for the commission, presented some very interesting figures on withdrawals and pressure decline. As of October 12, 1937 (the last pressure survey made before beginning one-day shutdowns in November), the field's average bottomhole pressure was 1,118.56 pounds per square inch. As of the last field survey, taken June 8, 1938, the field pressure average was 1,120.48 pounds. During this nine month interval a total of 104,489,822 bbls. of oil (to say nothing of the water) was withdrawn from the reservoir with an accompanying pressure increase of 2.28 pounds. As further evidence of the increasing benefits from continuation of restricted production, it was pointed out that the pressure rose 4.69 pounds from May 8 to June 8, during which time 11,175,526 bbls. of oil was withdrawn.

CHARLES F. ROESER of Fort Worth, speaking for himself and as president of the Independent Petroleum Association of America, added force to the plea for a continued restriction of the production rate in order that the industry might enter the fall season on a sound footing.

Even though the commission announced two days before the hearing that the shutdowns two days per week would no longer be needed after July 1, it now appears altogether possible that at least the one-day (Sunday) holiday will be continued, perhaps indefinitely. This, together with a general downward revision of field and basic state allowables to closely approach the present production figure of about 1,200,000 bbls. per day, is the prediction of several informed proration experts for July, and possibly the entire summer.

CALIFORNIA

CONSIDERABLE HEADWAY has been made in California during the past few months in reducing crude production. The peak reached in February of 736,000 bbls. daily was reduced to 685,840 bbls. daily in May, which represents a reduction of 50,160 bbls. This is a substantial cut in view of the fact that during March, April and May there were 378 wells completed with an initial production of 409,000 bbls. daily. Production for the first two weeks in June also shows a substantial improvement over the first two weeks in May, with current levels running at 674,600 bbls. daily, or 12,400 bbls. less than the corresponding period of last month.

Concerted action in the voluntary curtailment program to hold crude oil production to the quotas assigned, is continuing to reduce excess production. The quotas set by the central committee of California Oil Producers for June was 619,650 bbls. daily with the current excess running at 54,950 bbls. daily. While curtailment officials feel that good headway has been made, they still express the need for continued reduction below current levels if a favorable balance between supply and demand is to be maintained for the remainder of the year.

Stocks have increased 26,700,000 bbls. during the past eight months and with the prospect of a seasonal drop in demand during the fall of this year further cuts of production will be necessary if this surplus is to be reduced.

KANSAS

KANSAS CORPORATION COMMISSION announces a reduction of the oil proration assessment from one-fifth to one-tenth of a cent per barrel on July 1, due to a reduction in the expenses of the proration department. E. R. Sloan, chairman of the commission, said a hearing will be held July 15 in Topeka to discuss revision of the potential program with a view to further reduction in expenses.

An order limiting the drilling of wells in the Zenith pool in Stafford County, using a pattern of one well to not less than 10 and not more than 20 acres was issued last week by the corporation commission. It was the first well-spacing order the commission had made. Chairman Sloan, commenting on it, said: "The order attempts to solve a problem which has been widely discussed in the industry—the minimizing of excessive drilling, thereby reducing physical and economic waste."

OKLAHOMA

THE OKLAHOMA CORPORATION COMMISSION will meet on Wednesday, June 29, to fix allowable production of pools in the state in July. In some quarters it is believed there will be no increase in the allowables because the marketing situation has not changed much, if any, since the 405,000 bbls. per day allowable was established. There will be a preliminary meeting of producers, purchasers and the state conservation officer on July 28 to discuss market demand and matters in connection with proration.

ILLINOIS

THE ILLINOIS LEGISLATURE has three bills before it pertaining to the development of Illinois' new oil fields. They were introduced in the lower house by Representative R. J. Branson of Centralia.

One of the bills creates a mechanic's lien law on drilling wells; a second would compel drilling of offset wells on land within 200 feet of producing wells and the third validates pooling of interests of oil and gas producers to drill as a unit. This measure is aimed at economy in drilling and to prevent oil drainage from properties located near producing wells.

ARKANSAS

ARKANSAS STATE CONSERVATION Board will hold a special meeting Monday June 27 to discuss matters pertaining to the Buckner, Village-Magnolia, South Miller County and the Jones sand and Reynolds lime horizons in the Schuler field.

Standard of New Jersey Files Notice of $85,000,000 Issue

NEW YORK, June 21.—Net proceeds of a sale of $85,000,000 in debentures and notes by Standard Oil Co. (New Jersey) are to be used for general corporate purposes it was disclosed in a registration statement filed under the Securities Act of 1933.

"No specific allocation of net proceeds to be derived from the sale of the securities covered in this registration statement has been or can be made," the company said in its statement.

"The net proceeds will be placed in the general funds of the company and used for general corporate purposes, consisting largely in making available to subsidiaries additional money needed in acquiring and developing crude reserves, improving and extending refinery capacity, replacing less efficient and older types of tankers with larger, speedier and more up-to-date vessels, financing inventories and receivables and for such other purposes as the board of directors may determine to be in the interest of the company."

The total of $85,000,000 in securities to be marketed is divided into $50,000,000 of 15-year 2¾ per cent debentures due July 1, 1953, and $35,000,000 in serial notes, the interest rate on which will be supplied later. Some $4,000,000 of the serial notes will be sold to the Rockefeller Institute for Medical Research without underwriting discounts or commissions. All the debentures and $31,000,000 of the notes will be offered publicly.

With the exception of the $100,000,000 of 3¼ per cent debentures recently marketed by United States Steel Corp., the Standard of New Jersey offering was the largest made by an industrial company in many months. The 2¾ per cent interest rate carried by the Standard debentures also was the lowest that has been quoted on a long-term issue of similar type, reflecting the extremely easy money market conditions.

The statement called attention to unsettled economic and political conditions throughout the world which have resulted in the development of a high degree of nationalism in some foreign countries leading to the costly and uneconomic practice of governments requiring the building of local refineries to handle imported crude oil, the carrying of inventories in excess of normal requirements and to other burdens on operations.

As to business conditions, the statement said:

"While the business and profits of the company increased substantially during the last five years, preliminary reports covering activities for the first four months of 1938, which cannot be verified for some time in view of the widely scattered operations, indicate a drop in earnings such period of approximately 20 per cent, as compared with the corresponding period of 1937. No forecast is made in this registration statement as to future prospects, which will be affected by market demand, prices, costs, labor conditions, political and economic conditions, and other unpredictable factors."

Obituaries

LEWIS E. EXLEY, 67, an oil producer of Kossuth, Pa., died June 15.

CHARLES M. BASS, 49, employe of Sinclair Prairie Oil Co., died recently near Nowata, Okla.

R. L. GILMAN, 60, pioneer operator in North Central Texas oil development, died in Cisco, Tex., recently.

BOB BURNS, 38, former Wichita Falls, Tex., oil scout and employe of the Texas Railroad Commission, died June 15 in a Dallas hospital.

ARTHUR M. BRERETON, comptroller of Pure Oil Co., died June 16 in Winnetka, Ill., after a four weeks illness. His association with the company started in the Philadelphia office of the Pure Oil Co. of New Jersey. He advanced through station auditor, assistant auditor, and company auditor, to comptroller in 1929. In November, 1937, he was elected general chairman of the committee on uniform methods of oil accounting of the American Petroleum Institute. He was born on a farm in Delaware May 3, 1892.

CARL R. BLACKMAN, 53, oil operator, Tulsa, died June 14. He was a director of the Mid-Continent Oil and Gas Association. He was born at Waterbury, Conn., and spent his boyhood at Colorado Springs, Colo.

ARTHUR P. VAN SCHAICK, vice president, American Chain & Cable Co., Inc., died recently while traveling from New Orleans to Chicago, with Mrs. Van Schaick, to their home at Southport, Conn. He was a director of the Chain Institute, and former president of the American Hardware Manufacturers' Association.

EUGENE MAYS, 35, San Antonio, Tex., oil man, was killed June 16 in an automobile accident east of Calhoun, La. He moved to San Antonio from Houston, where he was employed by Humble Oil & Refining Co. for several years.

FRANK E. WOLFE, 67, of Tulsa, veteran Oklahoma oil man, died June 15. A native of Pennsylvania he became interested in oil development, later moving to Pemberville, Ohio, where he drilled his first well. He moved to Kansas in 1902, where he engaged in drilling for three years and in 1905 removed to the Indian Territory and participated in the development of Glenn Pool, Cushing, Drumright and others. He was the senior member of the Wolfe Brothers Drilling Co.; which he organized more than a quarter of a century ago.

He was noted for his active interest in the promotion of the International Petroleum Exposition. He had served on the old-timers' committee since the exposition was inaugurated. During each succeeding exposition he entertained the old-timers at his farm club near Oakhurst.

First Canadian Oil Well To Be Commemorated

OIL SPRINGS, Ontario. — A bronze plaque will be unveiled here on July 1, commemorating the completion here in 1857 of the first oil well in Canada.

OIL AT GOLDEN GATE INTERNATIONAL EXPOSITION

Western petroleum executives witness the signing of a contract, involving 40,000 square feet of exhibit space in the Vacationland Building on Treasure Island, between the 1939 Golden Gate International Exposition and the newly formed Golden Gate Petroleum Exhibitors, Inc. Seated are H. D. H. Connick, chief director of the Western World's Fair; B. I. Graves (Tide Water Associated), exhibitors' president; F. A. C. Guepin (Shell), and A. C. Galbraith (Union). Standing are P. H. Patchin (Standard), H. E. Britzman (Richfield), T. H. Webb (Texas), W. B. Curtis (General), W. A. Newhoff (Union), W. W. Monahan (Exposition), A. B. Tanner, attorney; Walter J. Held (Standard), E. A. Hugill, Jr. (Shell), and Austin Black, manager of Petroleum Exhibitors, Inc.

D. & B. Oil Co. Opens Another Los Angeles Basin Field

LOS ANGELES, Calif., June 20.—D. & B. Oil Co. has apparently discovered a new oil field in Los Angeles Basin as its No. 1 Lomita, in the Harbor City area, a few miles southeast of the eastern tip of the Torrance field, has been completed flowing 800 bbls. of clean 28-gravity oil daily from 5,275 feet, with water shutoff effected at 5,120 feet. The well is in section 30-4-13.

Gas Producers of Ohio Hold Meeting at Marietta

An enthusiastic overflow crowd of more than 150 producers from Ohio, Pennsylvania and West Virginia were in attendance at the sixth annual meeting of the Independent Gas Producers Association of Ohio held in the Lafayette Hotel at Marietta, June 17. A 6 o'clock banquet was served with varied entertainment at the conclusion of the meeting.

Walter A. Locker, Kemrow Co., Wooster, was elected president of the association; H. M. Brown, Chartiers Oil Co., Pittsburgh, Pa., vice president; Taylor M. Bishop, Alexandria, Ohio, treasurer, and Philip N. Faine, New Straitsville, Ohio, secretary. George Wittmer III, Wittmer Co., Pittsburgh, Pa., is the retiring president.

Directors elected for two-year terms were: Thomas O. Daly, Kenova Gas & Oil Co., Wooster; A. D. Townsend, Athens; Lloyd Brendel, Brendel Producing Co., Canal Fulton, and D. T. Orndoff, Waterford. It is planned to have the 1938 meeting at Wooster, Ohio.

Wichita River Bed Tract To Be Leased by State

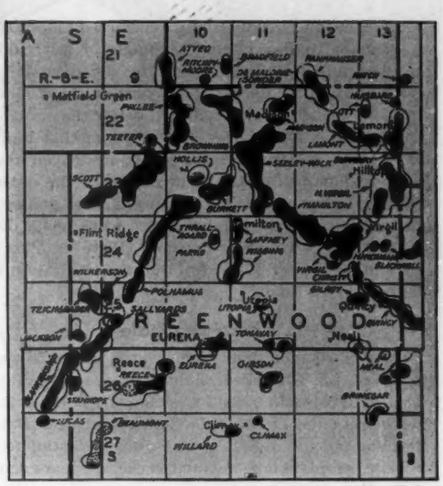
AUSTIN, Tex.—Governor James V. Allred said he would call a meeting soon of the Board of Mineral Development, of which he is chairman, to lease the Big Wichita River bed tract in the K.M.A. field to which the state obtained title in an agreed judgment.

Approving the settlement made with the Venmex Oil Co., which had been sued by the state for the entire 345-acre tract, Governor Allred estimated the 60 per cent obtained by the state was worth $1,000,000. Most of it is in proven territory of the field, he said.

The suit by the state was brought at Governor Allred's request after he questioned validity of a renewal of the lease by the land commissioner to Venmex, which retained four shallow wells and the southern half of the area, some proven deep territory.

Shoestring Trend Akin to Offshore Sand Bars

By DAL DALYMPLE



E. C. Jacobson, Maps, Tulsa

Plate 1—Oil pools of Greenwood and neighboring counties in Kansas, showing shoestring trends

Eastern Kansas, where the petroleum industry of the Mid-Continent had its origin, where shoestring sand pools are numerous and extremely productive and where shallow wells yield profitable returns at low cost, successfully maintains its place in the sun although it has been nearly 80 years since the first exploration for oil and gas in that area began in Miami County as early as 1860.

Never so sensational as the great Eldorado field of World War days, never providing gushers to compare with those of the Ritz-Canton and Oxford areas of a few years ago, never so prolific as the ever-increasing lime pools of western Kansas are today—yet eastern Kansas continues to attract the independent operator and to provide him with a degree of success sufficient to justify continued development and further exploration.

The eastern Kansas fields were developed in a series of stages extending across the period from immediately after the Civil War to the end of the World War, points out Marvin Lee, consulting geologist of Wichita. Much of that part of the state had its recurring periods of unusual activity followed by recessions. Many towns in the eastern part of the state owe their development to the oil and gas industry and now are centers of local ownership and homes of producers and refiners who continue the operation of the so-called stripper areas in which more than 15,000 wells or 83 per cent of Kansas' producing wells are located.

One of those "recurring periods of activity" has kept eastern Kansas operators busy during much of the past three years, with several developments of considerable importance. These included discovery of new production in the old Chanute district of Neosho and Wilson counties; opening of Arbuckle lime pools in Chautauqua and Elk counties; development of new shoestring sand areas in Anderson and Bourbon counties; the townsite play at Neosho Falls in Woodson County and discovery of nearby pools in Woodson and Allen counties; increasing interest in the geology of northeastern Kansas, with a resultant leasing campaign and the beginning of wildcats in Jackson, Riley and Clay counties; several Bartlesville sand discoveries in Cowley County; the beginning of water-flooding and other repressuring projects in old fields of Montgomery and other eastern counties; a recent gas discovery in Johnson County, only a few miles north of where first exploration began near Paloa; and the ever-interesting activity along the shoestring trends of Greenwood, Butler and neighboring counties.

The bulk of production in the eastern counties is from rocks of Pennsylvanian age, mostly lenticular sands. Some of these sands form narrow pools, often only one to three or four locations wide and extending for miles. They are the shoestring pools. The first shoestring sand pool was developed near Erie in Neosho County, according to Dr. Ed Bloesch, consulting geologist of Tulsa. Important shoestring pools later were found in Anderson, Linn and other eastern counties, but a greater exemplification of this type of development has been in Greenwood, Butler, Woodson and Lyon counties, along the theoretical shore of the Cherokee Sea of antiquity.

Geological Survey

Interest in these elongated pools was increased with the recent release by the Kansas State Geological Survey of a bulletin on "Origin of The Shoestring Sands of Greenwood and Butler Counties," by N. Wood Bass, of the U. S. Geological Survey. Mr. Bass spent three years studying these rich oil-producing sands of Kansas, his investigation being conducted under a cooperative agreement between the state and federal surveys.

He has identified the shoestring sands, found at from 1,500 to 3,000 feet deep, as having the characteristics of modern offshore sand bars. He is convinced, because of this similarity, that a large body of water, which geologists have named the Cherokee Sea, extending to a point near Madison, in northern Greenwood County, with shorelines extending southeastward and southwestward.

The following is quoted from an abstract of the Bass report:

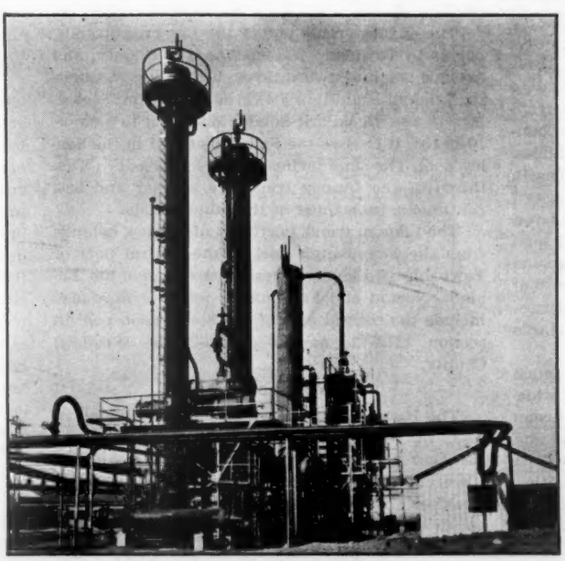
"High-grade oil, occurring in the shoestring sands in the Cherokee shale of Pennsylvanian age, has been produced for 15 years in Greenwood, Butler and adjacent counties, in southeast central Kansas. The shoestring sand bodies are lens shaped and elongated, and range in thickness from 50 to more than 100 feet, in width from one-half to 1½ miles, and in length from 1 to 7 miles. They are systematically arranged approximately end to end and form systems, or trends, each 25 to 45 or more miles long.

"Several of the shoestring sand systems have been completely developed by oil wells throughout their lengths of 25 to 45 miles. These oil wells, together with hundreds of dry holes, have closely defined the outlines and distribution of the sand bodies. There are, however, some undrilled areas of considerable extent wherein the sand systems may be present.

"The sand bodies are flat-bottomed lenses with convex tops. The individual lenses are separated by narrow stretches of country barren of sand. The sands of one system are somewhat higher stratigraphically than those of another. A map of Greenwood, Butler and adjacent counties showing the distribution of the shoestring sands, reveals that each sand body is arranged en echelon with respect to the adjacent bodies, a feature which is believed to be highly significant in determining the origin of the sand lenses.

"The distribution of the shoestring sands indicates clearly that they are either stream channel deposits or offshore bars. The high content of silt and clay suggests the sands were not formed as offshore bars, but may represent stream deposits; on the other hand, the well-rounded, coarse sand found in parts of the area is more characteristic of offshore bar sand. Indications are that the sand bodies are similar in outline and form to modern offshore bars and are dissimilar to stream channel deposits.

"The conclusion from available evidence is that the sand bodies are offshore sand bars that accumulated in a broad bay on the western shore of the Cherokee Sea. Most of the sand bodies are included in two systems that were deposited at slightly different times; each system is composed of a



A Butler County plant: Gasoline stabilizer equipment at Skelly refinery, Eldorado, Kansas

main trend, and a cross trend, as referred to locally.

"During the last of the two stages of bar building the newly formed shoreline cut diagonally across the old shoreline and a part of the earlier offshore bar system lay seaward below the surface of the water. The waves and currents that built the second system of bars partly destroyed the seaward portions of the sand bodies of the older system. The probable distribution of land and sea during the time the offshore bars were being deposited is illustrated by the map (Plate 2). There are many areas in the region that may contain undiscovered oil fields."

In Cherokee Shale

The shoestring sands are found in the lower levels of the Cherokee shale, and are generally termed Bartlesville sand by geologists. It takes its name from the Bartlesville sand found near Bartlesville, Okla. Geologically the sands are estimated to have been laid down some 250,000,000 years ago.

In that long-gone age this central part of the Mississippi Valley was a featureless plain, alternately dry land and either marsh or submerged lands, as the geologists reconstruct the picture of the past. Apparently during one of the periods of advancing sea toward the high plains of Kansas, sediments from more remote regions were deposited on the sea floor. Thus the Cherokee shale already was well under way in its formation when the advancing northwest shore of the sea reached the Greenwood-Butler county region. Then it was that the shoreline was stationary for a time, and offshore bars appeared, preserved today in the shoestring sands. It is for the geologists to determine just why the bars were not eroded.

Two of the sand trends, one 15 miles and the other 45 to 50 miles long, extend as parallel bands, about 6 miles apart, from eastern Butler County northeastward across northwest Greenwood County into Lyon County. These locally are referred to as the main trends and are known as the Teeter and Sallyards trends, respectively. Two other sand trends, about 8 to 10 miles apart, extend from western Woodson County northwestward across northeast Greenwood County into Lyon County. They are known locally as cross trends and are called the Quincy and Lamont trends. The Quincy trend crosses at right angles the Sallyards or longer main trend in the northwestern part of Township 23-11e. A fifth sand trend, known as the Haverhill trend and somewhat removed from the other four trends, extends slightly west of north for more than 30 miles from north-central Cowley County into south-central Butler County, but is broken by comparatively wide gaps.

The Longest Trend

The Sallyards or longest trend extends from the Keighley pool in Township 27-7e, Butler County, northeastward through the Seward, Lucas, Blankenship, Sallyards, Polhamus, Agard, Thrall, Burkett, Wick and Madison oil pools. The logs of a few dry holes drilled farther northeast in Lyon County, according to the Bass report, record sand carrying water at the general horizon of the sand of the oil pools, and many geologists believe that the sand in these wells represents a northeastward continuation of the sand lenses of the Sallyards trend.

However, the Lyons County tests are as much as 3 miles apart and consequently, with such widely separated bits of information, no conclusion seems possible concerning the lateral extent and shape of the sand body or bodies that have been penetrated by the drill in those northern localities.

The Teeter trend, northwest of Sallyards, extends from the Scott oil pool in the southeastern part of Township 23-8e, through the Teeter and Browning pools to the Theta pool in the northwestern part of Township 22-10e. The Pixlee and Atyeo pools extend from the northeast end of the Teeter trend northwestward into Lyon County, but are not included as part of the Teeter trend. Several wells north of the Atyeo pool found sand in the shoestring horizon, but with the exception of a well in section 29-20-10e, which produced a small amount of oil, the sand contained water instead of oil.

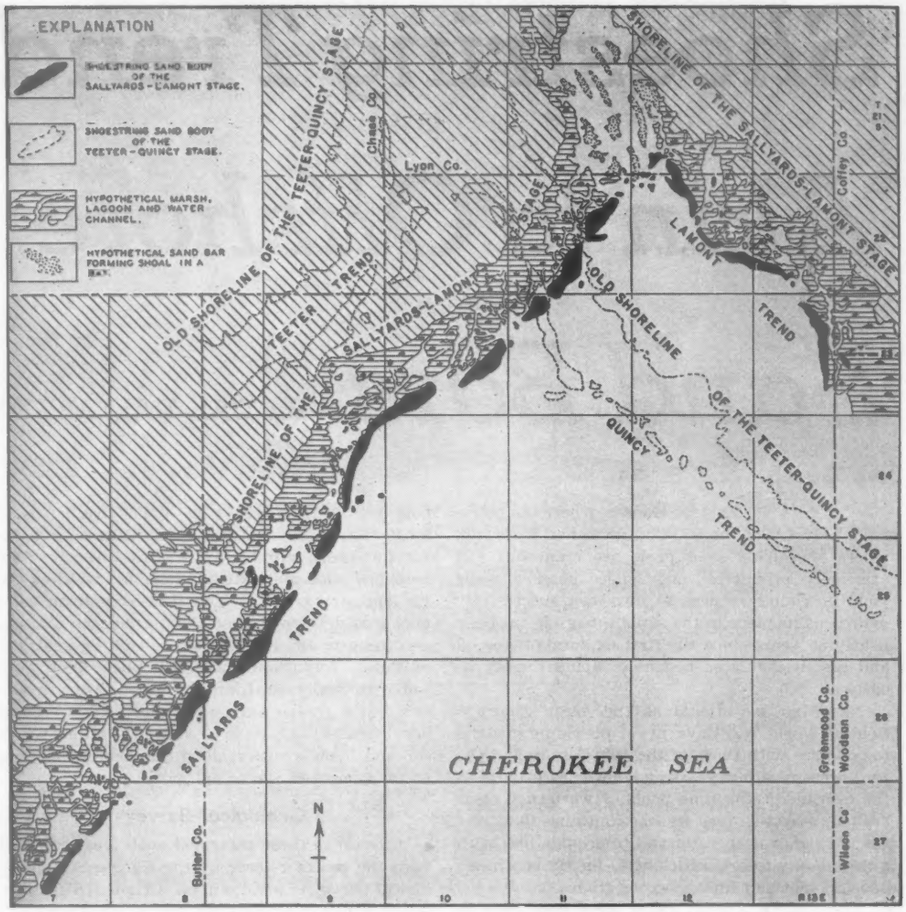


Plate 2—Hypothetical map of a part of the Greenwood-Butler County region during the Sallyards-Lamont stage of the Cherokee Sea, showing shore features of the Teeter-Quincy and Sallyards-Lamont stages. Compare with Plate 1, showing present-day distribution of oil pools in Greenwood County

The Quincy trend, one of the two cross trends, begins in Township 25-14e, Woodson County, and extends northwestward through the Quincy, Christy, Landon, Hamilton, Edwards Extension, Seeley, Harris and DeMalorie-Souder oil pools to section 10-22-10e. It crosses the Sallyards trend in the Seeley pool. The sand bodies in the southeastern two-thirds of the Quincy trend are smaller and less continuous than those of the other trends.

The Lamont trend, northeast of Quincy, extends from the Shambaugh pool in the central part of Township 23-13e northwestward through the Lamont, Norton and Fankhouser pools. It may also include the central part of the Stephenson pool in section 12-24-13e and section 7-24-14e, Woodson County.

Other Shoestrings

The Haverhill trend, which was not studied in detail for the Bass report, includes the Burden and Eastman pools in Cowley County and Fox-Bush, Haverhill and Smock-Sluss fields in Butler County.

Other shoestring sand pools in Butler County, not in the trends mentioned, include the Garden, Leon and Weaver areas. A part of the production of the Winfield and State pools and that of the Rainbow Bend and Baird areas in Cowley County is from shoestring sand lenses in the lower part of the Cherokee shale, which are believed to occur at the same general stratigraphic horizon as the shoestring sand lenses in Butler and Greenwood counties.

The Kansas shoestring oil fields may be important "keys" to the correct explanation of the occurrence of oil in at least one type of oil field, Bass says in his discussion of the origin and accumulation of oil in the shoestring sands.

"The shoestring sands are relatively small lenses of porous beds surrounded by dense, fine-grained shale, which probably forms an effective barrier to fluids that strive to migrate into or out of the porous sand lenses," he wrote. "Chemical analyses of waters from the shoestring sands compared with analyses of water from the Mississippi lime 50 to 100 feet below show marked differences in composition, indicating there is no communication of liquids in appreciable amounts across the shale beds. Sufficient differences in character of waters from shoestring sands at localities 25 to 30 miles apart appear to indicate there is a lack of lateral movement of liquids through the sand lenses, except locally, and certainly indicates a lack of movement from one lens to another. Therefore, the occurrence of oil in the shoestring sand lenses would tend to show that it originated in the sandstone sediments and in the sediments that occur close by, because the few facts available indicate it has not migrated far through the impermeable shale strata associated with the reservoir beds.

"Assuming the shoestring sands were deposited

(Continued on Page 92)

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CEMENTS

Deplore Lack of Agreement in Motor Knock Test Results

WHITE SULPHUR SPRINGS, W. Va., June 17.—Sharp differences of opinion in regard to the practical value of laboratory octane number tests were expressed by oil company and automotive engineers who attended the 6 days of meetings which just ended the annual summer meeting of the Society of Automotive Engineers. One school of thought condemned the present lack of correlation of laboratory and road tests results and called particular attention to the fallacy of expressing these test results in terms of the "average" car or "average octane requirements." The other school recognized the lack of exact coordination but indicated that much good had come from the comparative tests which have been made thus far. It was not willing to condemn the present references to "average" requirements because of the progress shown to date in building fuels and cars that utilize high mean effective engine pressures more economically for the general good of the motorist and both industries. As the meeting drew to a close the announcement was made that the membership of the society had established a new all-time peak and this in turn offered enthusiasm to the plan of holding the next summer meeting in New York City during the New York City World's Fair.

On the subject of laboratory octane test results correlating with road-test performance results the paper presented by A. J. Blackwood, C. B. Kass and G. H. B. Davis all of the Standard Oil Development Co. pointed out that it is not uncommon today to find nationally branded motor fuels of the same A.S.T.M. octane number to differ in the same car, and from car to car, by the equivalent of 5 to 6 so-called road octane numbers. It was indicated further that this is half the spread between the existing levels for premium and regular grade fuels and that there have been instances where a nonpremium regular grade fuel of 70 A.S.T.M. octane number caused less knock in a car than a premium priced fuel of 78 A.S.T.M. octane number.

The statement was also made that the above condition was not general and was made possible only by the combination of an unusual type of gasoline and unusual car characteristics. To aid in a solution of the problems the authors urged the elimination of "average" octane requirement data when referring to current car needs. They contended this was misleading. They objected to the term "average car" because they contended there is no average car. Every car, they stated, calls for a fuel of definite minimum octane value under each set of road conditions and on the basis of the present A.S.T.M. laboratory tests this cannot be accurately expressed. They stated that it is not possible to take the average of any series of such results and be assured the road performance will be satisfactory among any great number of the cars.

Suggest New Method

In view of the incoherent results reported on tests conducted by the authors and because of the general agreement that the laboratory and road-test results are not comparable a new method of test procedure was suggested by the authors. They offered the following in explanation of their proposed method as well as providing a background for the change. "Our procedure calls for selecting a fairly large number of privately owned cars." In explaining results on two investigations made by the company they stated the cars chosen were representative makes and did not undergo any mechanical changes in preparation for the test. The first test was conducted in New York City where the motor fuel quality is relatively high and the other was in the deep South where the motor fuel quality may be less uniform. The combined surveys included tests on 265 cars of the 1932-1937 range of models. It so happened that the average atmospheric temperature in both places was about 76° F. Each car owner indicated the age of the car when the carbon was last removed, and car mileage before the test was started.

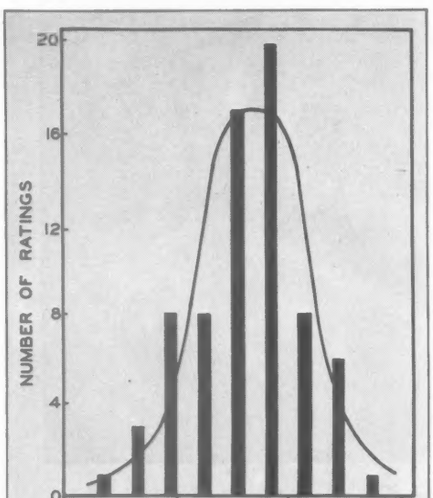

Fig. 1—The same gasoline was submitted to six laboratories for determining octane value. Seventy-two determinations were made. The results ranged from 69.5 to 71.5 in the ratio shown above

The test proper consisted of running a series of 12 fuels in each car. Half of these were branded commercial nonpremium fuels while the others were blends of the well-known reference fuels C-10 and A-5. The tests were conducted in accordance with the Uniontown procedure, on level ground, and the knock intensities were noted to determine the maximum on each. It was possible for the experienced operator to equip each car for the test and run each test within a period of no more than three hours.

The results were tabulated to permit classifying the cars into groups which were identified as knocking severely, medium, lightly, unobjectionably, trace and "not knocking." From data and graphs presented by the authors it was evident that the method suggested would be entirely practical for commercial application. This is particularly true from the standpoint of refinery control and car design and would be preferred to the laboratory test procedure or the road-test procedure.

Extent of Test Result Deviations

Quite in agreement with the above authors regarding the existence of inconsistencies, John M. Campbell and W. G. Lovell of the General Motors Corp. presented graphically the extent of the deviations. In preparing the graph, data were used which came from six different laboratories, each one of which reported from 10 to 17 antiknock test results. All tested the same base sample of gasoline. In all, 72 test results were reported. The graphic presentation of the results is shown in Figure 1. The deviation extends over several octane numbers and while this deviation becomes serious when exacting results must be obtained, it was pointed out that the degree of error was no greater than that recognized as the standard "curve of error" when making other measurements that involve personal judgment.

Dr. Graham Edgar, of the Ethyl Gasoline Corp., in summarizing his views on the subject, said:

"An individual test of the antiknock value of a fuel in an individual car on the road is actually an attempt to evaluate the psychological reactions of 'the average driver,' and may or may not reflect the reactions of any individual driver.

"The road knock rating of a fuel may vary enormously in different cars and in the same car under different conditions. For this reason, the 'average road rating' tells little of the behavior of any fuel in any individual car, and conversely the road rating of a fuel in any individual car tells little of the average rating.

"Average road ratings, of practical necessity, are subject to substantial error of experiment and interpretation. It is not to be expected that any average data will ever be secured to which no objections can be raised.

"Laboratory antiknock ratings are made for the purpose of maintaining specifications. The best that can be expected of them from any other viewpoint is that they will reflect reasonably such 'average road ratings' as can be agreed upon. It is not to be expected that such reflection should be more than approximate.

"No single laboratory method can ever reflect more than a single 'average road rating.' Since average road ratings vary with conditions of test, we must either have a single laboratory method corresponding to average conditions or several ratings corresponding to different conditions. Each of these alternates offer certain practical disadvantages.

"There is much to be said for the development of two (or more) laboratory methods corresponding to extremes of mild and severe conditions with proper allowance for volatility effects. If it can be established that average road ratings under different conditions can be expressed reasonably well as mathematical functions of the laboratory rat-

Discussing test results on diesel engine wear preparatory to presenting a report of their findings before the Society of Automotive Engineers. (Left to right) Dr. Ulric Bray, Dr. David R. Merrill and C. C. Moore, Jr., all of the Union Oil Co.

ings by these two methods, a flexible knock rating system is provided which represents probably the best practical solution of a problem which, fundamentally, is not capable of complete technical solution."

Aviation Fuels

Commenting upon this problem in connection with the development of satisfactory aviation fuels Doctor Edgar said:

"The problem of knock in the aircraft engine in service is one of very vital importance since an airplane cannot get off the ground and stay in the air if the fuel is inadequate from an antiknock standpoint. Here we are not concerned with psychological reactions or with temporary inconvenience—we are confronted with engine failure and probable disaster. For this reason, the problem of service antiknock ratings and the correlation with laboratory methods is one of the utmost importance. As in the case of the automobile, previously discussed, the problem is complicated and difficult from the technical standpoint and no complete solution has been achieved or is apt to be achieved. From the practical standpoint, however, the problem is much simpler than is the case with automobile fuels. The volume of aviation gasoline is relatively small and in the past the petroleum and aircraft industries have been able, through cooperative effort, to limit the types of commercial aviation fuel to those whose service characteristics were well known. This has been done partially by the addition to laboratory knock specifications of chemical or other specifications designed deliberately to exclude fuels whose service characteristics were in any way doubtful.

"It is too early to predict what the possibilities of laboratory methods may be. It is fortunate, however, that regardless of how satisfactory the laboratory tests may be, it is probable that in the future, as in the past, aviation fuels will be thoroughly service tested before they are sold commercially and commercial fuels will be limited to satisfactory types, whether or not it is possible to write entirely satisfactory specifications concerning them."

Aviation Fuels

The rating of aviation fuels for octane value has been under a systematic investigation for many months and a progress report presented by H. K. Cummins, director of the Cooperative Fuel Research Committee summarizes in part the work to date as follows: "Olefinic fuels show that the A.S.T.M. method satisfactorily predicts the full-scale value of very highly unsaturated fuels of both leaded and unleaded type. This conclusion is valid for such fuels up to 84 A.S.T.M. octane number.

"The tests of commercial 87 A.S.T.M. octane number and 100 Army octane number fuels containing 2½ to 3 cc. of lead show that the A.S.T.M. method underrates 87 octane leaded fuels by 6 to 8 octane numbers and 100-octane leaded fuels by 2- to 4-octane number.

"That unleaded isooctane blends of 84 A.S.T.M. octane number or more will be lower in full-scale knock rating than leaded blends of equal A.S.T.M. octane number containing in excess of 2 cc. of tetraethyl lead per gallon; thus unleaded blends should be regarded with caution for full-scale service.

"That benzol blends will not generally be equal in full-scale knock rating to leaded blends of equal A.S.T.M. octane number when this number is in excess of 84. However, when benzol blends of 84 or more octane number are compared with isooctane blends of equal A.S.T.M. octane number they will on the average be higher and rarely lower in full-scale rating. The behavior of high-octane number benzol blends in full-scale engines is widely variable as a result of engine type and operating conditions. It is apparent, however, that any revised knock test method should not be more severe on aromatic blends than the A.S.T.M. method.

"That the deficiencies of the A.S.T.M. method in respect to leaded fuels should be investigated further by tests of fuels of equal A.S.T.M. octane number and varying lead content."

Diesel Engines

Apart from the discussion of motor fuels and motors of the gasoline type groups of oil and automotive engineers held vital discussions in regard to the fuel and lubrication of diesel engines. As may be expected, entire meetings were devoted to these subjects and papers were presented on all phases of the work in progress.

Recent developments in diesel engines themselves were outlined by P. M. Heldt of *Automotive Industries* in which he said "Automotive-type diesel engines at present are being used much more extensively in European countries than in the United States in proportion to the total power used for transportation. This is due to the higher fuel costs there but on the other hand, the experience of adapting diesel type engines to light trucks and buses formerly driven almost exclusively by gasoline has been so successful, it was pointed out that the field for diesels is likely to expand. While it may not extend into the passenger car field to a great degree, the need for increasing quantities of diesel fuels in Europe seems assured.

The principal work being done among diesel engine manufacturers seems to be centered in France with an unknown amount of work going on in Germany where the diesel has had its most general application and growth.

Diesel Lubrication

Following Mr. Heldt's paper Dr. Ulric Bray, C. C. Moore, Jr., and D. R. Merrill, of the Union Oil Co., presented results of work they have been doing on the lubrication of diesel engines. The greater share of the paper appears in this issue. (Start page 47).

Aircraft Engine Lubrication

The lubrication of aircraft engines is of course of equally great interest and the lack of uniformity in the power output coupled with the constantly changing design to bring about the use of higher compressions, is placing new demands upon the lubricants used in such engines.

The status of present-day aircraft engine lubrication was probably best outlined by E. L. Bass and C. H. Barton of the Asiatic Petroleum Co., Ltd., in a paper presented before the Aircraft Engines meeting Tuesday afternoon. They stated: "It is no longer the simple function of an aviation oil to lubricate but has to cool and protect certain parts from corroding over a wide range of temperatures. The oil must not cause ring sticking under the highest temperatures and possibly under the slightest detonating conditions. These conditions are most difficult to overcome with the engine at full throttle during takeoff. Also, the oil must not cause gumming under weak mixture cruising conditions."

After presenting the problem the authors concluded their paper with the statement: "In the present state of knowledge it is essential to evaluate the performance of aircraft oils in every important property, except that of viscosity, by actual tests in engines. A great deal of the preliminary work may be carried out in suitable small units but final judgment remains with results when the oil is used in the full-scale engine."

General Meetings

In addition to the expressions of the authors in papers and the expressions of those who participated in the discussions which followed the presentation of the papers, many interesting and timely conclusions could be gathered in the general meetings and in committee meetings.

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OKLAHOMA CITY L. D. 785 Local 7-2725
WICHITA L. D. 59 and 116 Local 2-1431 and 2-1432
AND BRANCH STORES

SOIL ANALYSIS

(Continued from Page 21)

Figure No. 1 shows the four steps in taking a soil sample from one-half to 2 inches deep. The surface is first scrapped, then the mason's "jack" hammer struck into the earth at the proper angle; a sample about the size of the fist is brought up; closely molded in an oval shape by hand to prevent loss of moisture; tightly wrapped in cellophane; and placed in an envelope properly marked as to sampling station number. Different colored markings are used to distinguish between each line-test on the same survey. These samples are delivered to the laboratory for analysis.

In certain areas it is desirable to take samples deeper into the earth. Figure No. 2 shows the procedure in making sub-soil samples. An auger bit, 1¼-inch size, is bored into the ground to the desired depth, and when brought out the soil is taken off and saved in the same manner as described above. By placing pipe extensions on this auger, it is used from boats in near-coastal surveys.

Great care is exercised by the crews to avoid taking a sample where misleading showings might result. Samples are never taken near main traveled highways, or in plowed ground, near possible seepages or pipe line leaks, etc., unless absolutely necessary, and then proper notations are made on the sample envelope.

Although field sampling technique may appear quite simple at first glance, there is actually a great deal of system and exactness required.

Laboratory Analysis

It is obvious that the trade secrets contained in this process are related to laboratory procedure. However, in brief, this analysis work on soils begins where most general analyses stop. That is, in the usual soil analyses, from 2 to 5 per cent of the bulk volume is reported as "organic matter." Presumably it is with this small portion of the sample that the geochemical determinations are made. Analysis work is said to be carried far enough to distinguish even between the open and closed chain hydrocarbons (saturated and unsaturated).

Naturally, the sensitivity of hydrocarbon showings will vary in different geographic areas. In regions where thick sections of dense or impervious beds overlie the sedimentary formations containing petroleum, the sensitivity of the showing at the surface would be expected to be much less than in areas where the lithology is more favorable to upward migration. Hence, laboratory procedure is probably varied somewhat in different regions. The gravimetrical method (in which constituents are measured by weight); the volumetric (in which constituents are measured by volume); and the colorimetric (in which quantitative determinations are made on the depth of color, sometimes with the aid of dyes), are all possible methods for determining relative hydrocarbon contents of different soil samples, and could be used alternately depending upon the type of samples being worked, and the degree of sensitivity required.

All recordings are made in the metric scale. The quantitative values of hydrocarbon content of each sample is expressed in milligrams per kilogram (0.001/1,000), or parts per million. It is not uncommon for the hydrocarbon content to be expressed as one-millionth part of the total, or less. Very often the hydrocarbon content is expressed as the "mineral showing," although actually the reference to that compound as a mineral may be incorrect.

In recording the findings of laboratory determinations for final interpretative work, two types of drawings are used. First, a detailed map of the surveyed area is drawn, on which all surface features such as rivers, hills, highways, etc., are recorded, as well as all subsurface information, such as dry holes, producing wells, or formation outcrops. Also, on this map, each of the possibly several hundred sample stations are located. Each station or sampling point on the line-tests are shown in consecutive order across the area in the direction taken, and numbered—for instance—first from 1 to 50, the second line-test from 50 to 135, the third from 135 to 220, etc.

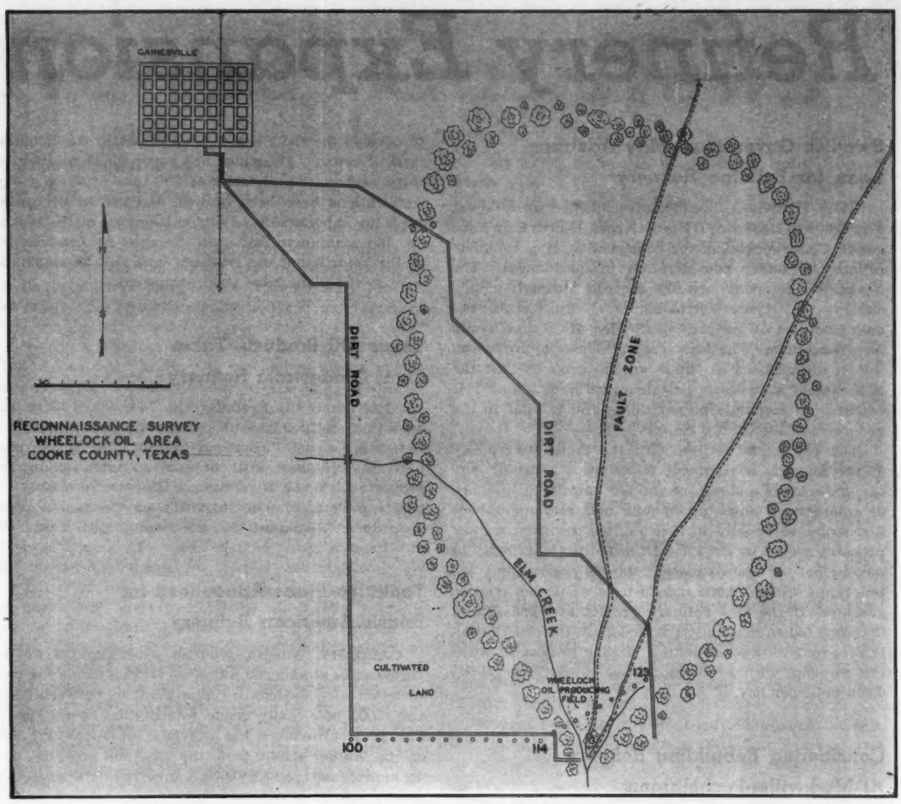


Fig. 5—Regional map of the Wheelock oil field in Cooke County, Texas, through which a one-line reconnaissance survey was run (small circles indicating position of each sampling station)

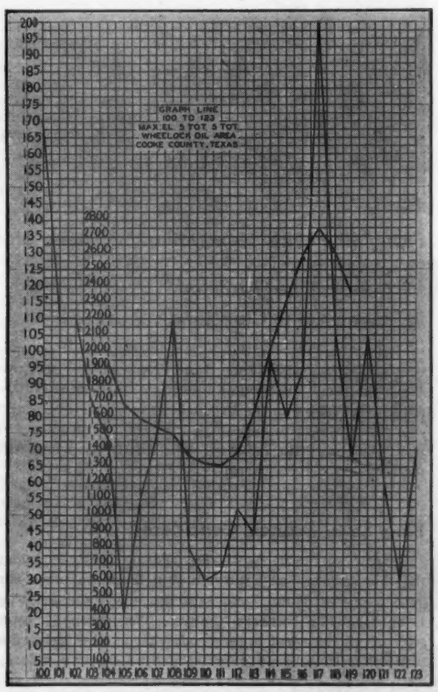


Fig. 6—Graphic record used in interpreting the laboratory findings from soil samples taken on the Wheelock field reconnaissance survey, (Fig. 5)

The second type of drawing made in preparation for interpretative work consists of individual graphs for each line-test. These graphs are drawn on coordinate paper. Along the abscissa the sample stations are listed consecutively. Results from laboratory analyses are indicated on the ordinate of the graphs, and plotted against the corresponding stations along the abscissa. Correlative and interpretative work is thus facilitated because each station number on the graphs corresponds exactly to one particular line-test or survey as shown on the map.

It should be understood that the values along the ordinate of these graphs are expressed as relative values of hydrocarbon content and not actual measurements. If the curve which results from their plotting does not make peaks and recessions on the graph prominent enough to afford easy intepretations (as might be the case in areas where the sensitiveness of the showings are very low), all relative values are raised by a suitable common power, and replotted.

Two curves are plotted on each graph. The first and more prominent one may be called the "quantitative mineral curve," as it is plotted against the relative hydrocarbon values. This curve prominently reflects all abnormalities in hydrocarbon content (with supposedly a similar abnormality in the underground structure). The second curve is commonly called the "mathematical curve," and is used to reflect the mean average of the quantitative mineral curve. The mathematical curve provides a background and check against unjustified abnormalities in the mineral curve. If the mean

(Continued on Page 106)

Refinery Expansion

Swedish Government May Advance Loan for Building Refinery

NEW YORK.—A Swedish government loan of about $2,000,000 to Rederi A/B Nordstjernan (North Star Navigation Co.), Stockholm, for construction of a complete refinery is under consideration by parliament. The navigation company already controls through a subsidiary, the Nynses-Petroleum A/B, Stockholm, the only complete oil refinery in Sweden at Nynaeshamn, near Stockholm. The loan was previously approved by the Swedish Board of Trade on the grounds that the existence of a domestic petroleum refining industry is essential to economic preparedness and is vital to the general welfare of the country.

The project is in line with the announced policy of the Swedish government to assure a constant supply and adequate stocks of refined petroleum in times of emergency. Since automobile and airplane use is increasing so rapidly in Sweden, the refinery project probably would be designed to produce a maximum of motor fuel, or approximately 100,000 metric tons annually, of which 25,000 metric tons would be aviation gasoline. If the new refinery project at Nynaeshamn is completed successfully, the Rederi A/B Nordstjernan is prepared to proceed with a similar project in western Sweden, with a corresponding capacity, or about 6,000 bbls. per day.

Considering Rebuilding Refinery At Merkwiller-Pechelbronn

A group representing Pechelbronn Societe Anonyme D'Exploitations Mineres, French producing, refining and marketing concern, has returned to Europe after investigating latest refining technical developments in the United States with a view to adapting them to the plant at Merkwiller-Pechelbronn.

While in this country the group considered estimates on an extensive modernization and expansion program which, if accepted in proposed form, will mean almost complete rebuilding of the existing facilities.

Canada Not to Impose Dumping Duty on Montana Crude

OTTAWA, Ontario.—Hon. Chas. Dunning, minister of finance, in parliament officially announced that the federal government would not impose a dumping duty on Montana crude oil entering the Canadian West. Such a duty was urged by Hon. R. B. Bennett, opposition leader, to ensure the western market for Turner Valley crude, which is now prorated at 30 per cent of potential. Mr. Bennett claimed that while this proration was in effect, Montana crude at 80 cents per barrel was being imported into Alberta at the rate of 1,400 bbls. a day.

Hon. Mr. Dunning took the view that a dumping duty to exclude a small amount of Montana crude would not solve the major problem confronting the field. The big issue was whether Turner Valley crude could be transported economically to eastern markets or the Pacific Coast, or whether to continue the present policy of curtailing production and conserving the oil for future use.

Cracking Unit to Be Built At Australian Shale Plant

NEW YORK.—A Dubbs cracking plant capable of processing 1,600 bbls. of shale oil per day is to form a part of the Newnes, New South Wales, shale oil field development, according to reports received from Australia last week through the department of commerce. Substantial progress has been made in the preparation to develop the shale deposit, according to a recent announcement of the Australian federal treasurer.

The National Oil Pty., Ltd., the company formed to develop the field, has decided to obtain the Estonian type of retorts. Drawings are being made for two retorts, each with a capacity of 300 tons of shale a day. Applications have been invited, and are being considered, for appointment of senior members of the technical and manufacturing staff. Tenders on construction of the retorts and the cracking unit will be sought as soon as the plans have been completed.

Texas Oil Products Takes Over Gladewater Refinery

The Texas Oil Products Co. has taken over the operation of the 5,000-bbl. topping plant of the Martin Refining Co. at Gladewater in the East Texas area. Fred N. Williams will continue as manager of the properties. Texas Oil Products Co. will probably organize a new company to carry on the actual plant operations. Plans call for processing East Texas oil.

Tentative Plans Announced for British American Refinery

CALGARY, Alberta.—British American Oil Co. of Toronto has announced tentative arrangements for construction of a modern refining plant of between 4,000 and 5,000 bbls. daily crude capacity in East Calgary. The project involves the purchase of an 86-acre site on the Walker Estate from the city, and a capital outlay approximating $1,350,000 is involved. The project is conditional on the granting of a fixed assessment of $79,500 for 20 years, with adjustment of building restrictions on the area. A vote of Calgary ratepayers early in July will be required. Construction work employing about 400 men for six months is involved, with subsequent employment of around 75 men and an annual pay roll of $150,000. The plant will operate largely on Turner Valley crude.

Ashland Expects to Complete Topping Unit by November

Ashland Oil & Refining Co. expects to complete the construction of a 7,000-bbl. topping unit at its Catlettsburg, Ky., refinery by the first of November. It will complete the addition to the Dubbs cracking unit at that same location by September 15 and will then be able to process 3,300 bbls. of topped crude and gas oil daily.

This is but part of a general refinery expansion program that will extend into 1939 and will include the erection of vacuum distillation equipment for the reduction of asphalt and lubricating oils.

New Refinery to Be Built At Edmonton, Alberta

EDMONTON, Alberta.—Mutual Oils, Ltd., has purchased a refining plant at Mount Pleasant, Mich., which will be dismantled and moved to Edmonton. The plant, of 1,000 bbls. capacity, is expected to be in operation by August 1. Turner Valley crude will be used almost exclusively, with some Wainwright crude processed for road oil and gasoline in the winter months. Between 20 and 25 men will be employed, and extensive storage capacity for crude and refined products will be pro-

Pipe Line Activity

Firing line with 11 welding machines mounted on trucks; also trailers, cars and pickups

Joint Pipe Line Tariff on Michigan Oil to Cleveland

Effective July 10, the joint pipe-line tariff granted the Michigan-Toledo Pipe Line Co. and the Buckeye Pipe Line Co. will become operative. Standard Oil Co. (Ohio) will then run the first Michigan crude oil through this combination to supply part of the requirements of its Cleveland, Ohio, refinery. The tariff has been established at 25 cents a barrel.

Flag Lake Branch Considered

FORT WORTH, Tex.—The Texas Co. is considering construction of a branch line from its main carrier near Corsicana, Tex., into the newly opened Flag Lake field, in Navarro County. The company owns two of the present four producers in the field, and important outposts are being drilled on two sides.

Standard of Louisiana Plans Arkansas Field System

Standard Oil Co. of Louisiana is making plans for laying a pipe line system to include the three new Columbia County, Arkansas, fields. Outlets will be provided for the Buckner, Magnolia, and Village fields, and the crude will be moved to Baton Rouge. No definite plans have yet been announced.

I.C.C. Puts Value at $3,250,000

The Interstate Commerce Commission has placed a tentative final value of $3,250,000 on the properties of the Texas Pipe Line Co. of Oklahoma, owned and used for common carrier purposes as of December 31, 1934. The company, part of the system of the Texas Corp., operates 1,268 miles of pipe lines in Oklahoma.

Pipe Line Deliveries Off

Deliveries of crude oil through the nine pipe lines formerly in the Standard Oil eastern group amounted to 8,202,000 bbls. in May, compared with 9,528,000 in May, last year. For the first five months of this year deliveries were 40,643,000 bbls., against 46,812,000 in the corresponding period in 1937.

vided. James Ryan of Calgary is a director, and Malvern E. Parker, formerly superintendent of the Hi-Way refinery in Saskatchewan, will be engineer.

Natural Gas News

Three Refineries in Santa Maria Field of California

The Santa Maria field of California witnessed the starting up of the new Five C's refinery in the past week and through which local crude will be processed. It will run 2,000 bbls. daily and will sell its output of products to the local trade.

One other plant is operating in the field namely the Santa Maria plant and a third plant is under construction. The latter is to be operated as the Maguire Oil Refining Co.

Natural Gasoline

Construction Under Way on Continental K.M.A. Plant

The Continental Oil Co. has poured concrete for foundations of building units on the company's new natural gasoline plant located 6 miles southeast of Electra, Tex., in the K.M.A. field. Enough contracts have been signed to meet the plant's requirements. Heavy materials are arriving and the main construction work is to get under way this week. The plant is located in the Beaver Creek district in the heart of the producing area on the Waggoner Brothers ranch and in the B.S.&F. Survey, Abstract 387.

Shell to Remodel Gasoline Plant at Healdton, Okla.

Shell Petroleum Corp. is to enlarge and remodel its natural gasoline plant at Healdton, in Carter County, Oklahoma, according to recent announcement. The revamping work will involve changing the plant from compression to absorption and an enlargement in capacity from 2,500 gallons to 8,000 gallons daily.

Propose Gasoline Plant

The Producers Gas Co. is constructing a gas treating plant to serve the Otis field of Barton and Rush counties in Kansas. The plant is estimated to cost $75,000.

Ask Constitutional Amendment To Stop Diversion of Taxes

ALBANY, N. Y.—Automobile associations, trucking organizations, and hotel owners joined in demanding approval of a constitutional amendment earmarking motor fuel taxes for highway construction and maintenance.

Proponents of the proposition contended that New York highways "are falling far behind" those of other states and additional funds are needed immediately.

"We must keep up our highways, we must regain our leadership among the states if we are not going to see business in many lines go elsewhere," said John J. Hyland, representing the New York State Hotels Association.

"If motor trucks are to serve our people as they should, motor vehicle taxes must be devoted to highway purposes," S. V. Gianniny, Rochester, of the Associated Trucking Industries, Inc., asserted.

Appealing before the convention highways committee, headed by the New York City park commissioner, Robert Moses, the complainants said they were confident that to use motor fuel taxes exclusively for highway construction and maintenance would not only increase employment but raise revenue from other levies.

Truman J. Preston, vice president of the New York Automobile Association, led the fight for a constitutional amendment which would give the legislature power to earmark the taxes.

Railroad Commission Power On Rate Regulation Tested

AUSTIN, Tex.—The question of whether the railroad commission has original rate jurisdiction in incorporated cities and towns was moved from Dallas to Austin when Texas Cities and Community Natural Gas companies filed an application for writ of error with the Supreme Court.

Appealing from a decision of the Fifth Court of Civil Appeals in Dallas, the companies allege principally that the Dallas court erred in holding the forty-fourth district court of Dallas was without jurisdiction in granting a temporary restraining order against the railroad commission in its attempts to originate regulatory investigations in incorporated cities and towns. The companies' complaint and petition for the restraining order was based on an order of the commission calling a hearing at Trenton for the purpose of investigating gas rates of that town without the city having first conducted its own investigation.

Charging the commission with assuming powers not granted by law, the company alleges the commission for more than 17 years has contended it had no power of original or concurrent original jurisdiction in incorporated cities and towns.

El Paso is the only major city where the commission is acting under its own order of concurrent original jurisdiction. Commission employes have been investigating Texas Cities Gas Co. books, records and accounts since early this year.

Declining Pressure Necessitates Pumping Gas to Calgary

CALGARY, Alberta.—As a result of declining rock pressure in the Turner Valley field, gas will have to be pumped to Calgary this winter for the first time since 1924.

Prior to 1923, Calgary consumers were supplied with gas from the Bow Island field, later supplemented by the Foremost field, with some gas from the upper horizons in Turner Valley. In 1924 Royalite Oil Co. No. 4 drilled into the limestone, encountering naphtha gas under high pressure; and since that time Turner Valley gas has been piped to Calgary without the aid of compressors. Substantial quantities of waste gas from Turner Valley have also been pumped into the Bow Island field.

Since 1925, nearly 1,000,000,000,000 feet of gas have been withdrawn from Turner Valley, most of this burned in waste gas flares after extracting the naphtha. Production from 1925 to 1937, inclusive, is estimated at 959,440,000,000 feet. Present wastage, after supplying Calgary consumers and furnishing fuel for drilling, is around 200,000,000 feet a day.

Casinghead closed-in pressure, which averaged 2,000 pounds or more in 1925, had dropped to 640 pounds at the end of 1937, and the decline has continued steadily in 1938. Provision was recently made by the Alberta government for an oil and gas conservation board to enforce conservation measures, but necessary enabling legislation has not been completed by the federal government.

Asks Early Reconsideration Of Lone Star Rate Case

AUSTIN, Tex.—Early reconsideration of the Lone Star Gas Co. gate rate case by the Court of Civil Appeals was sought in a motion filed by Attorney General William McCraw shortly after receipt of a mandate from the U. S. Supreme Court returning the case to the Austin tribunal.

Several years ago the Railroad Commission ordered that the Lone Star's charges to distributing companies in nearly 300 Texas cities be reduced from 40 to 32 cents per thousand feet. A jury decided the cut would confiscate company property. The court of civil appeals ruled the reductions was valid. The highest tribunal last month reversed that decision and ordered the case returned to the civil appeals court.

Canadian Gas Association Officers

TORONTO, Ontario.—At the annual convention of the Canadian Gas Association, T. P. Pinckard, of United Gas & Fuel Co., of Hamilton, was elected president, and Julian Garrett, of Northwestern Utilities, Ltd., of Edmonton, vice president. George W. Allen, of Toronto, is secretary.

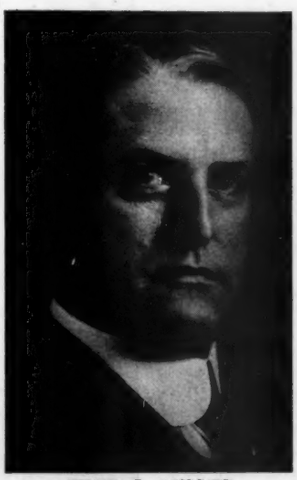
Union Gas Co. of Canada, Ltd., has announced that its natural gas service will not be extended to Strathroy during the present year.

FRED A. MILLER RESIGNS AFTER 35 YEARS SERVICE

After more than 35 years of service, Fred A. Miller has decided to relinquish all official duties with the S. R. Dresser Manufacturing Co., Bradford, Pa. His resignation as a director and officer was accepted after a tribute by all his associates to the position of high respect in which he is held by the entire gas industry, and his valuable service to the company.

In 1905, when the S. R. Dresser Manufacturing Co. was incorporated, Mr. Miller became secretary-treasurer. Solomon R. Dresser, founder of the company in 1880, was president. Since that time, Mr. Miller has witnessed and played an important part in the tremendous growth of the gas industry in this country—from the time that gas was used only in the localities where it was produced until today when many long-distance pipe lines transport it to cities sometimes 1,000 miles or more away.

Following Mr. Dresser's death in 1911, Mr. Miller became president and served in that capacity for 18 years until 1929, when he was elevated to chairman of the board of directors.



FRED A. MILLER

During his long and outstanding association with the gas and oil industry, where he is and has been widely known for years, Mr. Miller served as president of the Natural Gas Supply Men's Association until its affiliation with the American Gas Association. He later became a director of A.G.A.

As a mark of the esteem with which his associates regard him and his contributions to the company's past growth, he has been elected honorary chairman of the board by the directors of the Dresser company.

Union Gas Profits

CHATHAM, Ontario.—The annual report of Union Gas Co. of Canada, Ltd., for the fiscal year ending March 31, 1938, shows a net profit of $926,910 compared with $700,614 in the previous year. A decrease of $286,500 in funded debts and an increase of $356,488 in working capital was also shown. Increased earnings were attributed to larger sales, particularly in the London area; the number of meters increasing 2,446 to 54,523 at the end of the year.

INTERNATIONAL NEWS

Mexico Agrees to Trade Oil for Commodities From Germany

Sale of 10,000,000 bbls. of mostly expropriated oil from properties of American and British oil companies in Mexico has been arranged by the Mexican government for delivery to Germany over the next six months in exchange for materials and machinery.

The reported transaction involves payment for 60 per cent of the oil in materials and machinery and the remaining 40 per cent will be settled for in cash.

Davis & Co. of New York, according to reports from Mexico City, are acting as the Mexican government's agents in the deal, obtaining, it is said, a 5 per cent commission. The prices of the oil will be fixed according to a sliding scale. No provision is made in the arrangement, it is said, for assignment of any proceeds to the companies from whom the oil properties were seized last March under the expropriation act.

At least 8,000,000 bbls. of the total involved in the transaction with Germany must come from expropriated properties. It is estimated that properties previously owned by the Mexican government could produce no more than 2,000,000 bbls. of crude oil during the six months within which delivery is to be made.

Meanwhile the American and British oil companies expropriated filed an appeal in Mexican courts challenging the constitutionality of the expropriation. B. T. W. van Hassalt filed an appeal on behalf of the 17 companies involved.

The Federal Circuit Court two weeks ago upheld the expropriation but ruled that moneys and records seized must be returned to the companies. In the appeal the companies contend that they really were expropriated as punishment for supposed contempt of the labor board wage decision and not for the reasons of public utility mentioned in the expropriation law of 1936.

The expropriation law itself is attacked as unconstitutional, in that it provides only for expropriation of lands and waters, the brief pointing out that the Mexican constitution only had in mind land division. The companies insist that the constitution provides for indemnity payment coincident with occupation, therefore the law's provision for payment within 10 years is clearly unconstitutional. The petition cites nine cases in which the Mexican courts upheld payment at the time of the expropriation, claiming that there were no decisions by Mexican courts against this precept. The appeal complains that none of the legal formalities were complied with in the petroleum case.

In an effort to preserve the patriotic fever over expropriation of the oil properties, the day of confiscation, March 18, has been declared a national holiday and observance on an annual basis provided for in a government manifesto.

The growing independence of Great Britain from Mexican crude oil was reported last week in a review of important trends for the past six years. In 1932 Great Britain imported 16,500,000 gallons (imperial) of Mexican crude oil. In 1933 and 1934 the figures rose to 60,700,000 and 114,700,000 gallons, respectively. Then in 1935, 1936 and 1937 the respective figures fell to 89,300,000 gallons, 9,200,000 and 9,900,000 gallons. Part of the decline during the past three years has been due to more extensive refining in Mexico, but largely because of increased importations from the United States, Venezuela and Iraq.

Oil Exports From Soviet Russia Suffer Marked Drop in April

Petroleum exports from Soviet Russia suffered another drop in April, declining to 44,603 metric tons compared with more than 98,000 metric tons for the preceding month. Exports for the first four months of this year are only a little more than 30 per cent of shipments for the same period in 1937.

Export figures are based on shipments passing Istanbul and they are believed to include virtually all of the movement, although some overland shipments into the interior of Europe may take place without appearing in the trade reports.

Venezuelan Production Rises To Above 500,000 Bbls. Daily

Venezuela crude oil production was revived with a rush in May. The output totaled 15,818,266 bbls. for the month, a daily average of 510,266 bbls., the first time this year yield had jumped above 500,000 bbls. per day.

Two factors combined to stimulate Venezuela production. One was the improvement of shipping conditions over the bar at the mouth of Lake Maracaibo permitting operators to utilize a greater percentage of their tanker fleet capacity and the other was expanding summer demand for products. Nearly 760,000 bbls. of the increased output in May came from properties of Venezuela Oil Concessions, Ltd., subsidiary of the Royal Dutch-Shell group which turned to Venezuela for part of the supply cut off by Mexican expropriation.

Subsidiaries of Standard Oil Co. of New Jersey, Lago Petroleum Corp. and Standard of Venezuela, increased their May production 1,027,219 bbls. over April. Most of the other companies operating in Venezuela increased their output in proportion to their normal position.

Mene Grande Oil Co. produced 287,130 bbls. more crude in May than in April, but had been affected less by restriction in demand during the earlier months of the year. The low production mark for 1938 was reached in April when a yield of 452,450 bbls. per day was registered. The increased output was distributed rather uniformly among the various producing fields. Lagunillas output was up 2,295,443 bbls.; La Rosa gained only 159,824 bbls.; Tia Juana was up 391,190 bbls.; Quiriquire increased 166,506 bbls.; the Mene Grande field was higher by 166,506 bbls. and the Tarra field's output was 39,247 bbls. greater in May than in April.

The new Temblador field in eastern Venezuela which was added to the list of shipping fields in February produced 193,163 bbls. of crude in May, a gain of 23,272 bbls. over April output. Smaller gains were registered by the other fields.

The following table shows production for May compared with May, 1937, and a summary of daily average yields by companies and fields:

VENEZUELA PRODUCTION

(By fields)

	May 1938	May 1937	Dly. avg. May, 1938
Lagunillas	6,301,734	8,615,758	203,282
La Rosa	2,753,856	2,026,224	88,834
Tia Juana	2,552,158	645,000	82,328
Quiriquire	2,168,967	2,046,156	69,967
Mene Grande	843,710	1,165,524	27,214
Tarra	411,547	364,650	13,276
Cumarebo	218,627	221,078	7,052
Temblador	193,163	.....	6,232
Pedernales	162,369	119,394	5,239
Concepcion	79,185	92,402	2,554
La Paz	77,088	14,102	2,486
El Mene	55,862	61,194	1,802
Total	15,818,266	15,371,482	510,266

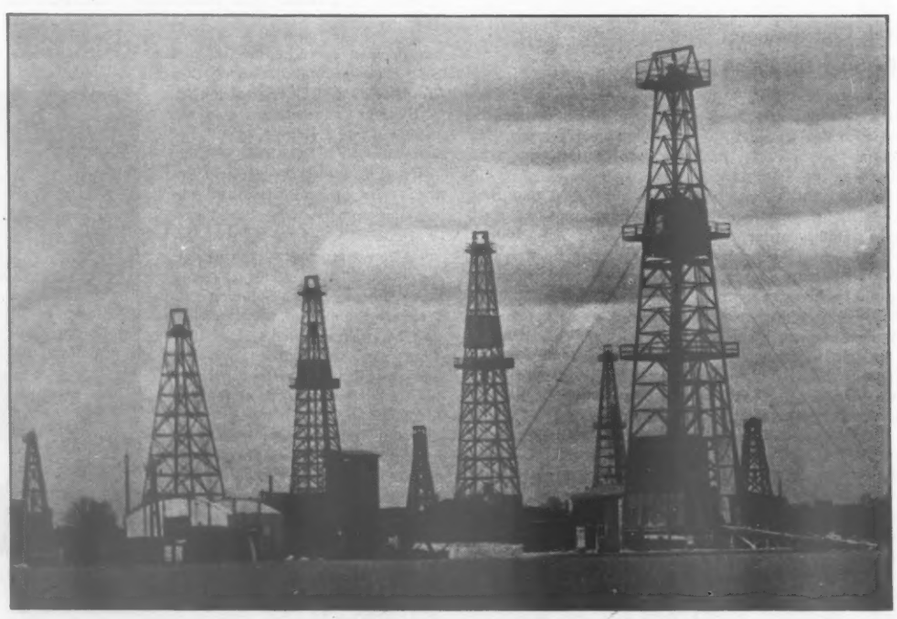
	Bbls.
Daily average—May, 1937	495,858
Daily average—April, 1938	452,450
Total—April, 1938	13,573,505

(By companies)

Vene. Oil Concessions	4,764,625	3,973,720	153,698
Lago Pet. Corp.	4,567,255	5,083,894	147,332
Standard of Venez.	2,901,480	2,795,231	93,596
Mene Grande Oil Co.	2,219,130	1,872,000	71,585
Caribbean Pet. Co.	843,710	1,165,524	27,214
Colon Dev. Co.	411,547	364,750	13,276
British Controlled	55,862	61,194	1,802
North Vene. Pet. Co.	54,657	55,269	1,763
Total	15,818,266	15,371,582	510,266

Czechoslovakian Output Up

Czechoslovakia produced 10,962 bbls. of oil in April, boosting the yield for the first four months of 1938 to 45,045 bbls. The April output was 11.8 per cent less than that registered in March, but was 14.4 per cent greater than for the same month in 1937. Four months' production this year is 6,517 bbls. greater than for the same months in 1937, a gain of 17.8 per cent.



In Nienhagen field, Germany

ENGINEERING and OPERATING

In This Issue

WEST TEXAS DRILLING-IN PRACTICES ARE BEING CLOSELY STUDIED
By Mitchell Tucker ..... *Page 44*

Problems involved in drilling the 150- to 400-foot pay sand in the Permian Basin of West Texas and New Mexico present a source of great study to operators in that area. The present study is not so much one of the mechanics but rather one of technique of completing the wells. Here such factors as proper hole size, preservation of a clean formation face and completion of wells by reverse circulation are discussed. Since it is highly important to complete wells with a low gas-oil ratio special consideration has been given to the setting of the pipe.

CONDENSATION OF OLEFINES WITH ISO-PARAFFINS IN SULFURIC ACID
By S. F. Birch, A. E. Dunstan, F. A. Fidler, F. B. Pim and T. Tait ... *Page 49*

Advantages offered by the isoparaffinic type of fuel for use in aircraft engines has resulted in a great amount of research being directed towards producing these high-octane fuels in reasonable quantity and at a reasonably low cost. Several methods of producing these isoparaffinic fuels have been developed and here the authors describe the reaction of isobutene and isobutane in the presence of sulfuric acid. The procedure involved is simple and does not involve the use of high pressures and temperatures.

LAKEVIEW AREA PROVES VALUE OF DETAILED RESERVOIR STUDY
By T. P. Sanders ..... *Page 56*

Although the discovery well of the Lakeview field in California was the state's most spectacular gusher, due to the unusual type of reservoir the pool remained virtually undrilled for 25 years when it was rediscovered more or less by accident. A recently completed investigation of the field revealed that the fluid recedes downdip as the oil is withdrawn. Several benefits have been derived from this study which shows the value of geological work in an area of settled production.

OPERATING IDEAS ..... *Page 46*

PROGRESS IN METALS—*By W. L. Nelson* ..... *Page 61*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 63*

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 64*

Wellhead and control connections under the substructure of a well drilling-in under pressure in the Fuhrman field in Andrews County, in the northern portion of the basin

West Texas Practices Being

By MITCHELL TUCKER

Over the past two years from 200 to 300 wells have been completed per month in the Permian Basin of West Texas and New Mexico. The problems incident to rotary or cable tool drilling to the top of the Big lime are comparable to those encountered in somewhat similar areas, and do not present any particular difficulties. However, the problems involved in drilling the 150-400-foot pay section are many, and present the source of greatest study and importance in the drilling of that area. The drilling of the lower portion of hole after setting oil string on or near top of the lime, costs several times more per foot and consumes considerably more time per foot than the upper portion of the hole.

For that reason, and others, the matter of drilling-in technique is very important to operators in the basin fields. Much progress has been made over the last few years in the pressure completion procedure, and these developments are all now a matter of record. The present study of the problem is not so much one of the routine mechanics but rather one of technique of completing the wells, which in turn will determine the most profitable returns during their producing life.

Some of the most important objectives of correct well completions in this territory are as follows:

1. In the West Texas portion of the basin it is highly important to preserve a clean formation face, drill proper size hole, and shoot or acidize in a manner to afford the highest official potential test possible, as this factor enters into the allocation formula. With the comparatively high drilling costs, and low price received for the 30-36-gravity crude oil, the length of payout is especially important. In New Mexico, potentials do not affect allowables, but the points mentioned are desirable also from the standpoint of possible longer flowing life and increased ultimate production.

2. Gas-oil ratios have recently become a limiting factor in the allocation formula from all West Texas fields. For that reason, if no other, any efficient completion practice should seek to afford the lowest ratio possible. Other well established advantages follow the low producing ratio, such as longer flowing life, quicker payouts, possible higher recovery, greater overall profits, etc.

3. For evaluation and future work-over purposes, the thick pay section should be drilled and logged in the most careful manner possible in order to make all available data reliable and complete for later reference.

4. After accomplishing the above three requisites of efficient drilling-in procedure, or while accomplishing them, it is important, of course, to drill the pay section and place the well on production in the shortest possible time and at the minimum expense.

The variable occurrence of porosity and saturation within the several Permian zones does not allow the picking of casing seats or advance decision as to drilling-in procedure from correlative work with offsetting wells. Each well must necessarily be a special problem, and a special object of study. Porosity from 5 per cent to cavernous, and saturation occurring irregularly through a 150-400-foot section, complicates the problem.

Pressure Drilling

Most of the pressure drilling has been done with oil as a circulating fluid in the low pressure fields, although in some isolated instances gas or gas and oil has been used as a circulating medium. The early disadvantage mentioned for this practice was the additional expense involved in the use of special equipment. This has been partially removed by the use of a tank and separator mounted on wooden skids, and moved from well to well when each reaches its completion stage. Also, when first introduced, the additional expense of renting equipment, etc., was borne by the contractor—who was receiving none too much for his service at that time. After the operators became convinced of the beneficial results from this practice, drilling contracts have almost all been reworded to allow the operator to dictate drilling-in procedure, and bear any expense over the straight footage made. Before drilling in with oil, the circulating lines are connected into a closed system, allowing sufficient back-pressure to be carried on the return line to the well so as to permit the formation which is being drilled to produce oil and gas while drilling proceeds. The tank serves as an oil reservoir, and the separator permits gauging and separation of gas production, and a dumping point for the cuttings removed.

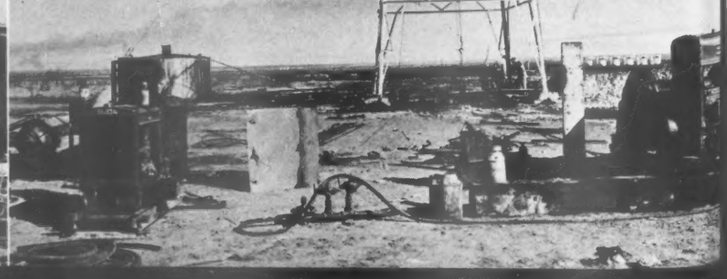
Reverse Circulation

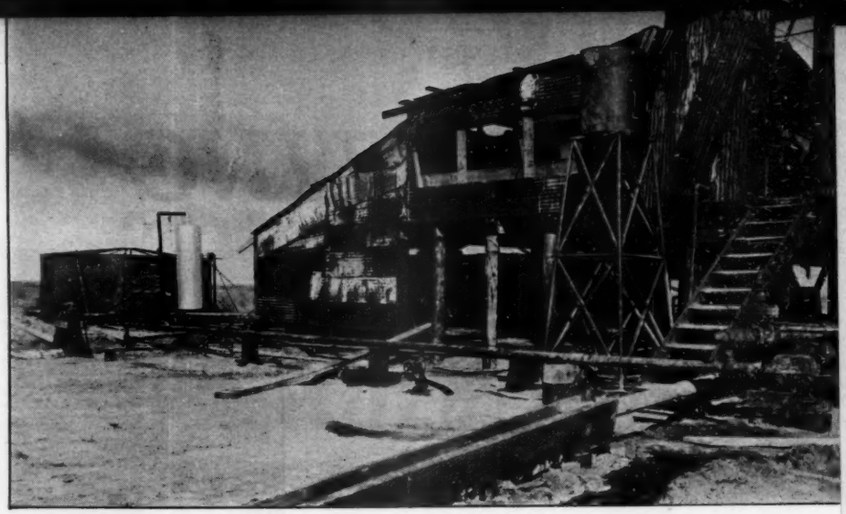
The reverse circulation, or Beckman process, is also finding an application in both wildcat and field wells. Preservation of the formation face, quicker returns of cuttings resulting in more accurate logging of the formation, and time saved due to release of the rotary rig after setting of the oil string, are offered as its chief advantages.

Perhaps the greatest advantage this method offers over the straight drilling procedure under pressure with oil as a fluid is in a more accurate logging of the section. The reverse circulation method, just as the name implies, uses weathered oil as a drilling fluid, which is introduced down the annular space and up through the special holes in the rock bit on end of tubing. Hence, the cuttings are carried to the surface through the restricted tubing area at a much greater velocity than would be the case if the conventional fluid travel were used. Sufficient time must elapse, however, for cuttings to be pulverized to the point where they will pass through the restricted bit holes. It has been suggested that the use of small size drill pipe instead of tubing, and larger bit holes, would increase the efficiency of this process. Due to this rapid rate of travel of the

Two large-size slush pumps, compounded with two 250 h.p. stationary diesel drilling engines, are being used at Magnolia Petroleum Co.'s No. 1-A McKee, important test in northern Pecos County

Rigging up equipment for drilling-in with the reverse circulation system. The small electrical generating unit at left is for driving the rotary table. Unitized hoisting equipment is seen at the right





Drilling-in with the closed system in the Harper field. The 4-inch line coming from the well and running back to separator is part of the closed oil circulating system

Drilling-In Closely Studied

flushing fluid, only a short lag is noted from the time the formation is drilled and the time samples are in hand on the surface. Drilling-time records permit accurate logging.

In an effort to avoid the necessity of standardizing, or to use the pressure control method, some interesting pioneer work has been done in the northern portion of the basin by the use of pulverized limestones as drilling fluid. In this procedure, chalk or limestone is used as a mud forming solid in the drilling fluid, and the producing section drilled in the usual manner, recording the drilling-time at frequent intervals as an aid in formation logging. When total depth is reached, a small acid wash is used to clean the calcium carbonate mud from the formation face, and the well then heavily acidized or shot for completion. It is assumed that the hazards of clogging the low pressure and porous formation with heavy mud is eliminated by this plan, as the acid wash acts as a cleansing agent before well completion.

Any calcium carbonate material that will give the proper viscous and weight qualities to the fluid will be satisfactory. Pulverized limestone, marble, oyster shells, chalks, etc., may be used. It is sometimes necessary to add some sort of mud-forming solid, such as colloidal clays.

Very high initial productions as compared to offsetting wells using mud in the Fuhrman pool in Andrews County have indicated the worth of the calcareous circulating medium, and have stimulated the present extension of its use.

Gas-Oil Ratios

Clearly, the proper and easiest time to establish efficient producing ratios of gas to oil is during the completion period of the well. Completion methods conducive to low ratios are sometimes ignored in the anxiety to establish high potentials for increased allowables. With the injection of the gas limit factor (varying in different fields according to local conditions) the ratio and potential factors assume a more equal consideration in completion work.

If the point of gas-oil contact is accurately determined, and the oil string set and cemented below this point, a workable ratio is usually assured, and the drilling of the pay section below need not be greatly concerned with resulting ratios. However, in anticipation of future workover jobs, packer settings, squeeze jobs, etc., in order to reduce ratios in the later life of the field, it is highly important to log the section carefully during completion.

The advantages of cable tool drilling through the producing section have been sufficiently important in the Permian Basin to warrant the continuation of standardizing on many wells. Practically all wildcats, and from one-third to one-half of the field wells are standardized and drilled in with cable tools today in that district. This is particularly true in areas where heavy gravel-tamped shots are used in completing of the wells, as the cable tools are necessary in cleaning out after shooting.

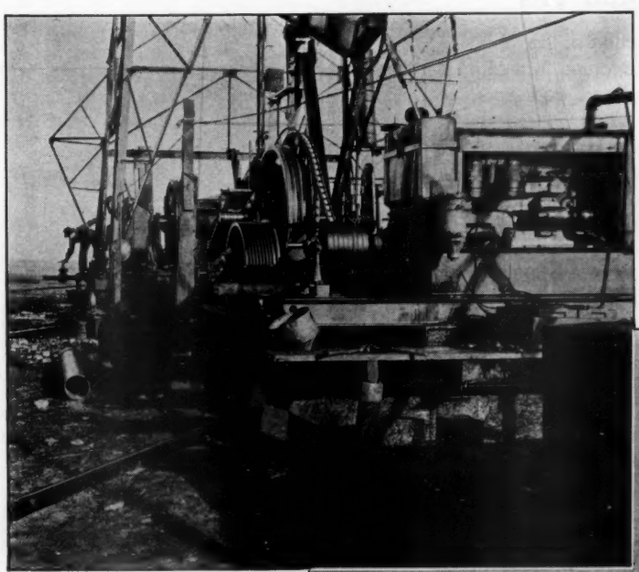
Drilling-in Economies

Controversies can still easily be held over the economies of using cable or rotary tools for drilling-in. Rotary rigs require five men per tower, cable tools require two; rotary wells are usually on production and begin to pay off several days sooner; the large investment in rotary rig can be released for service elsewhere when cable tools are used, and can be kept busy during the 72-hour cement set period; better logging results from the use of cable tools except in wells which flow large volumes while drilling; and if well is to be shot, cable tools are required for cleaning out purposes anyway.

With the increasing importance of completing wells with a low gas-oil ratio, special consideration has been given to setting pipe far enough below the gas-oil contact to effectively seal off the gas, and yet sufficiently high above the oil to permit shooting without damage to the pipe. Tamped gravel shooting has been the logical method to use for several years, but where the shot is placed and tamped close to the casing seat, there was always the fear that for some reason it might fail to go off. Such a condition would prevent setting another shot above because of the increased danger to the pipe, or impossibility of fishing out the shot in order to reset it.

To meet this condition, wire containers are being used (somewhat similar to lead wool containers) for placing gravel upon top of the shot. From 5 to 10 containers are usually run depending upon the size of the shot, and connected together, with a hook on the top container to facilitate fishing out the gravel if the shot fails to go off. Hence, in such a case, the gravel containers may be fished out, new torpedo run, and gravel returned to the hole without increasing height of the shot. By so handling, the casing which was set low to assure an efficient gas-oil ratio, is not placed in any greater hazard of damage from the shot in the oil bearing portion of the hole.

There is a continual trend toward smaller hole sizes in proven areas, for obvious reasons in the interest of economy. This is especially true in the northern basin fields where production is found from 4,900-5,200 feet. The saving in drilling a smaller hole and setting 5½-inch instead of 7-inch oil string is substantial at this depth.



New type portable cable-tool drilling-in rig, diesel driven, as seen in the Harper field

Seaboard Oil Co. No. 1 Munger and Nix, discovery well in central Andrews County, being swabbed into slush pits during the testing period

OPERATING IDEAS

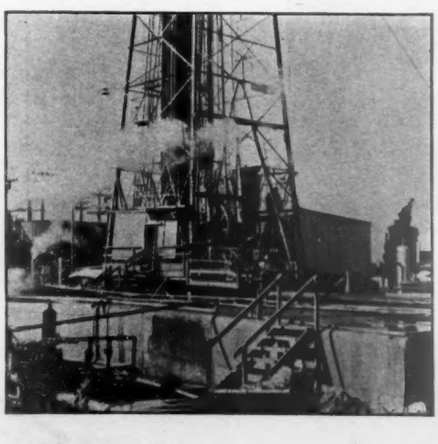
Covering for Derrick Floor

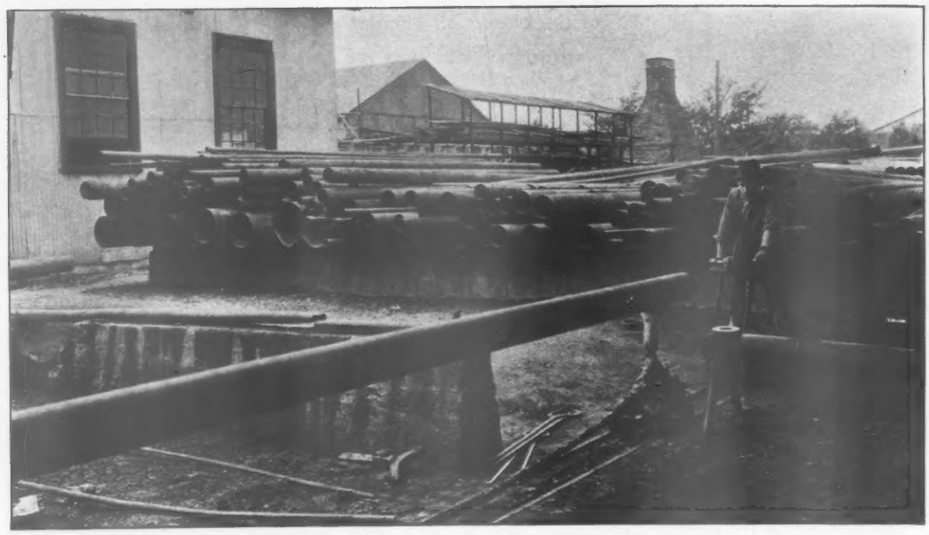
Safety is promoted on drilling-rig floors around the table by nailing short strips of heavy slate-coated composition roofing to the wooden derrick floor. The expense is small and the material is durable enough to last for the entire period of drilling. The

rough surface protects the driller at a most dangerous point and is particularly effective when wet clay is carried to the floor on the shoes of the rig operators.

Tanks Used as Mud Pits

In the Long Beach harbor section of the Wilmington field, an ordinance decrees that all slush pits must be cement lined and surrounded by fences, or they must be made of steel. One operator has managed to satisfy the city requirements with a comparatively small cash expenditure. He uses long tanks which have been removed from abandoned sea-going tankers. It is reported that these make excellent vessels for handling and treating drilling mud.



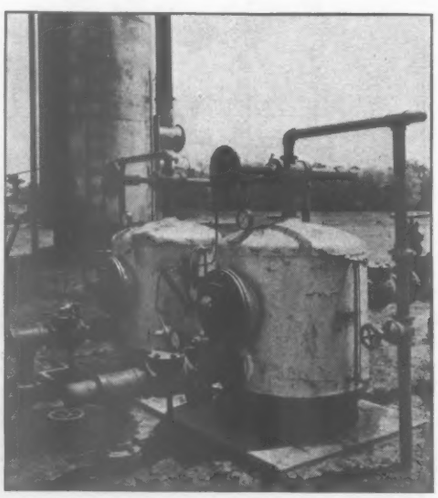


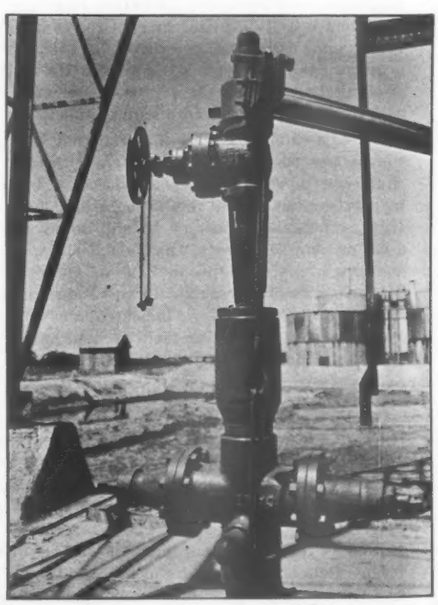
Handling of Pipe in Cleaning Yard Facilitated by Conveyor

A large natural gas company operating a pipe reconditioning yard in Tulsa has constructed a conveyor which has proved to be of great aid in handling pipe to be heated before being scaled and cleaned. The conveyor consists of two dollies attached to a continuous chain traveling through the furnace and making a complete loop to return to a pulley. The pulley is operated by two cranks some 15 feet away from the furnace, thus eliminating the necessity of the operator working close to the high temperature of the furnace.

Eliminating Back Pressure

In the Fitts pool near Ada, Okla., one operator pumping 24 wells has encountered from 14 to 24 pounds back-pressure when the wells were produced through the individual separators, thus cutting down on the efficiency of the pumping equipment. To overcome this condition, the vents on the separators are opened and oil is pumped through two volume tanks into two treating columns. The regulating equipment on the volume tanks is set to operate automatically to treat out the oil without any loss of vapor, and to hold the proper pressure.





Gate Valve Used for Flow Bean

An independent operator in the Oklahoma City field has devised a simple indicator on the gate valve of his flowing wells to show the amount of opening of the valve. This is accomplished by a piece of twine wound around the stem with two weights hanging evenly from the stem when the valve is closed. By "cracking" the valve so that one weight hangs about 1 inch lower than the other indicates the flow desired.

Condensation of Olefines With Iso-Paraffins in Sulfuric Acid

By S. F. BIRCH, A. E. DUNSTAN,
F. A. FIDLER, F. B. PIM and T. TAIT.
Research Department, Anglo-Iranian Oil Co., Ltd.

In the last few years the notable situation has developed in which the engine designer has been outpaced by the chemist, that is to say, fuels have become available which are too good for the most extreme requirements of current types of engines. This state of affairs is, however, unlikely to be of long duration and there seems little doubt that in the near future the demand for such fuels will even exceed the supply.

Of the materials suggested as basic fuels for high octane blends the most satisfactory are certain iso-paraffinic hydrocarbons and di-isopropyl ether. The latter, while possessing excellent blending characteristics and lead susceptibility, suffers from the disadvantage of having in common with other oxygen-containing fuels, a somewhat lower calorific value than a hydrocarbon fuel. Whether this need be seriously considered for most practical purposes is doubtful, although as Barnard points out *(N.P. N. 3-31-37, p. 65)* a time may well come when the exclusive use of high octane fuels will be justified economically by making possible very low cruising fuel consumption. This would, of course, tend to penalise low calorific value fuels.

Even though rated in the 100 plus octane range, aromatic hydrocarbons are not regarded at present as satisfactory aircraft fuels on account of their temperature sensitivity, although a reversion to water cooling, which Heron regards as not altogether improbable, would however, bring them into a position of very considerable importance.

The advantages offered by the isoparaffinic type of fuel for use in aircraft engines of high power output have resulted in a considerable amount of research directed towards producing suitably highly rated isoparaffins in reasonable quantities and at reasonable cost. Of these the production of iso-octane (2.2.4 trimethylpentane) and an isomeric iso-octane obtained by the hydrogenation of the butene-isobutene condensation product has been satisfactorily worked out, and several plants for their production have been erected or are in course of erection. The production of a third isoparaffin, isopentane, by straight fractionation for use in place of the low-boiling fractions to provide volatility has also materially aided in the production of high octane fuels. The use of isopentane is of course restricted owing to its low boiling point so that it cannot be regarded in the same category as iso-octane.

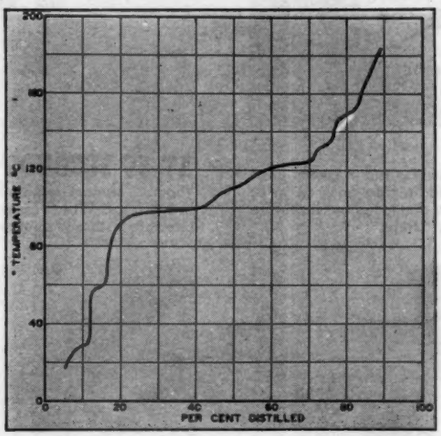


Fig. 1—Distillation curve (25-plate column) of liquid product from action of 97 per cent sulphuric acid on isooctane at normal temperature

Since both iso-octanes are derived from isobutene, the amount of the latter hydrocarbon available must eventually determine the iso-octane production. The more recently discovered process in which, as a preliminary step, isobutene and butene are condensed has the advantage over the older method, involving only isobutene, of doubling the yield. Admittedly the octane rating of the product obtained by the former process is somewhat lower, 95 O.N. against 99-100 O.N. for commercial iso-octane, but the greatly enhanced yield more than compensates for this. Both processes involve hydrogenation with its attendant disadvantages and comparatively high costs.

Theoretically, the combination of isobutene with isobutane should give iso-octane, a possibility which occurred to Parks and Todd *(Ind. Eng. Chem., 1936, 28, 4-18-9)*. Such a reaction they concluded from thermodynamical considera tions would be possible, although the relatively low temperature necessary coupled with the chemical inertness and low reaction velocities usually attributed to paraffin hydrocarbons made the feasibility appear dubious. *(Ind. Eng. Chem., 1936, 28, 418.)* In fact, they did not publish their results until after Ipatiev and von Grosse *(J. Amer. Chem. Soc., 1935, 57, 1616)* had succeeded in carrying out the reaction using as catalyst boron trifluoride activated with nickel powder and either water or hydrogen fluoride. From the wide boiling range of the product given by Ipatiev and von Grosse it is obvious that the reaction is by no means limited to simple combination of

(Continued on Page 52)

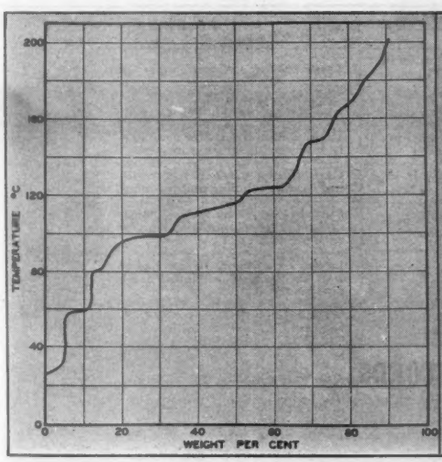


Fig. 2—Distillation curve (25-plate column) of product from condensation of di-isobutene and isobutane at 20° C.
$(C_4H_9)_2$: C_4H_{10} ratio = 1 : 2 (run 59)

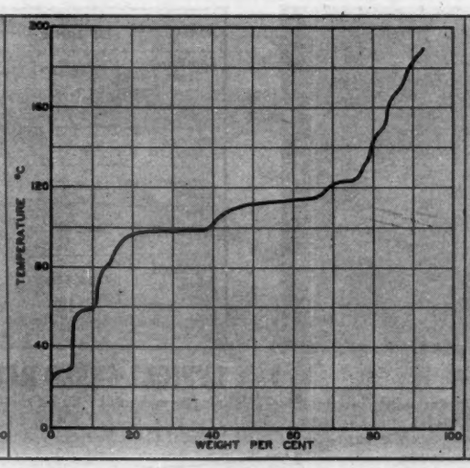


Fig. 3—Distillation curve (25-plate column) of product from condensation of di-isobutene and excess isobutane at 20° C.
$(C_4H_9)_2$: C_4H_{10} ratio = 1 : 8 (run 63)

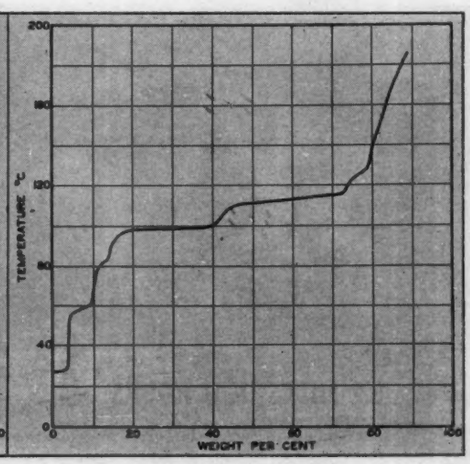
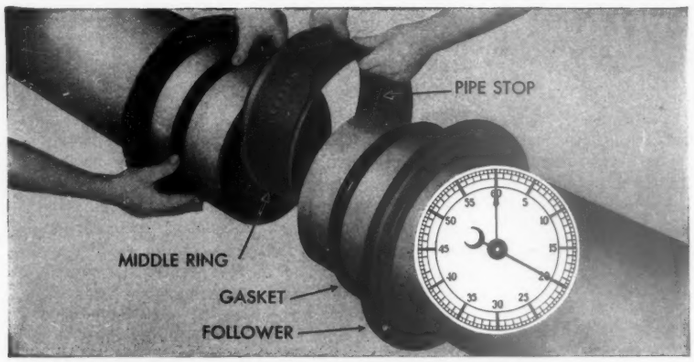


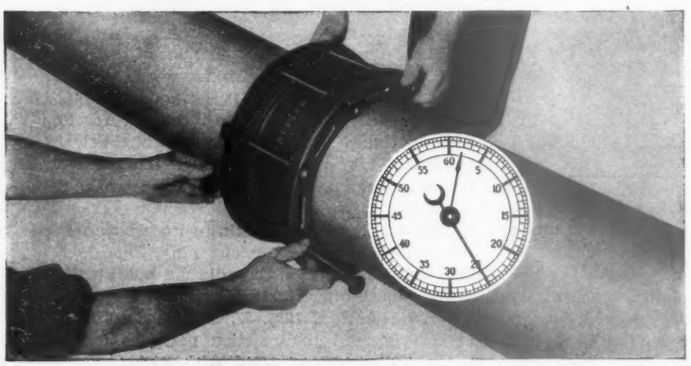
Fig. 4—Distillation curve (25-plate column) of product from condensation of isobutene and excess isobutane at 20° C.
C_4H_8 : C_4H_{10} ratio = 1 : 4 (run 129)

SPEED UP*

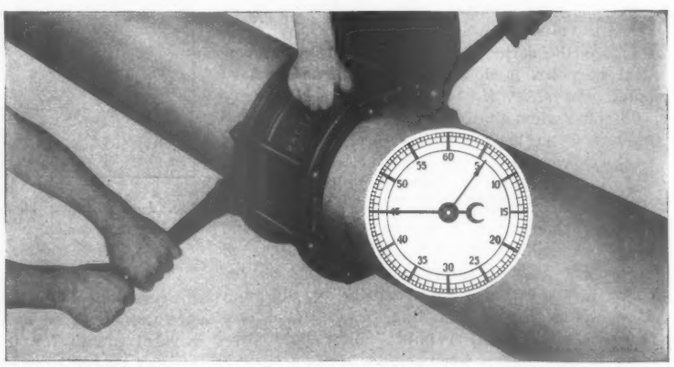


20 SECONDS—STEP 1! Dresser followers and gaskets have been placed over plain-end pipe (12" ID). Middle ring goes on next; note inside pipe-stop. With Dressers, no time is lost due to tedious lining-up of pipe-ends or other complicated "getting-ready" steps.

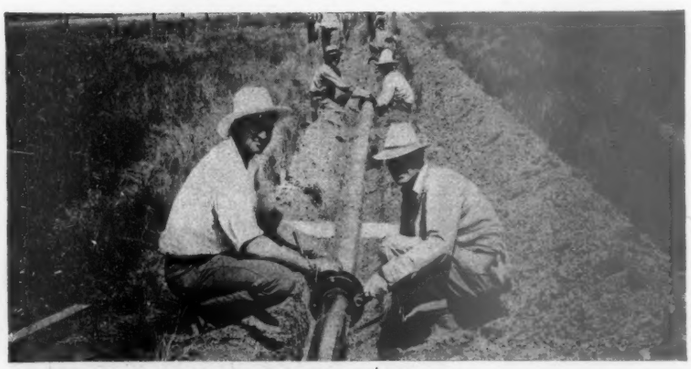
AT 50 SECONDS—STEP 2! Pipe-ends have been shoved "home" against middle-ring pipe-stop; gaskets and followers are then brought up. With Dresser's, no one step holds up others. No workmen interfere with one another. Each has full-time job. No delays getting tests.



AT 2 MINUTES, 25 SECONDS—STEP 3! Bolts are inserted and nuts run up finger-tight. With Dressers, the small, well-bunched crew is always "up" with ditcher (reducing supervision problems). No "lag" between laying and jointing. No long trench length need be kept open.



AT 6 MINUTES, 45 SECONDS—FINAL STEP 4! Nuts are wrenched up tight. Jointing with Dressers is quickest part of job—can be done only in one way, i.e., permanently tight the first attempt every time! Flexibility gives top speed with straight pipe on many curves.

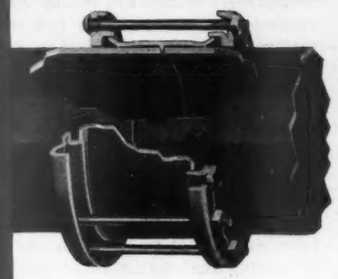


5.2 MILES IN 11 HOURS! That was the record set on this Dresser-coupled 5½" OD line in Texas. Assembly with Dressers is "straight-line"—economical from several points, *enabling additional labor to be added easily*. Wet ditches, rain, snow, muck, wind, swamps, even darkness, etc., cannot seriously retard progress.

LOCATION	SIZE OF LINE	RECORD	REMARKS
Southwest Texas	5½-in. OD	5.2 miles in 11 hrs.	Dawn-to-dusk. "Green" labor used.
Auburn, N.Y.	10-in. ID	4,640 ft. in one day	Going toughest in 13 states. Swamps, quicksand, and water.
Ontario, Canada	10-in. ID	52 miles in 50 days	Undulating terrain. Line completely buried without pressure test.
Cincinnati, Ohio	12-in. CIP	1,312 ft. in 9½ hrs.	Cast-iron pipe and couplings, requiring care in handling and lowering.
Buffalo, N.Y.	36-in. ID	680 ft. in 8 hrs.	First day's work by gang of "pick-up" relief labor, totally unfamiliar with pipe laying.
Ft. Wayne, Ind.	42-in. ID	400 ft. in 8 hrs.	Laying crew of only 10 men had to wait for trencher on almost every pipe length.
Birmingham, Ala.	60-in. ID	520 ft. in 8 hrs.	WPA labor; included all work from trenching through backfilling.

TYPICAL SPEED RECORDS. See Table above. Assembly time per Dresser joint may be safely estimated as follows: 4": 3 min; 6" & 8": 5 min; 10" & 12": 7 min; 14": 8 min; 18": 10 min; 20": 12 min; 24": 14 min. (Two boltmen—all jointing operations after stringing. Based on time studies and figured at 2 man-minutes per bolt—considerably less for small sizes.)

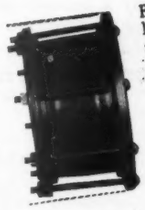
Your Pipe-jointing!



(Cutaway view of Dresser Coupling, Style 38)

*** SPEED . . . .YES! ALSO:**

1. **PERMANENT TIGHTNESS**—proved for 50 years, on 150,000 miles of pipe.
2. **FLEXIBILITY**—expansion, ground movements, vibration, lowering stresses, etc., are absorbed. Many curves, grades, etc., made with straight pipe.
3. **SIMPLICITY**—standard parts are assembled on plain-end pipe by unskilled labor, using only a wrench under almost any weather or ditch conditions.
4. **STRENGTH**—predetermined; joints safely withstand any specified pressure.
5. **TRUE ECONOMY**—a truly lower joint cost throughout life of line, plus salvage.



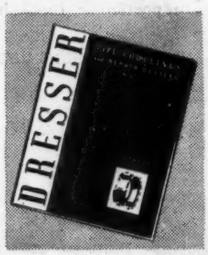
Reducing connections between plain-end steel and/or cast-iron pipe of different outside diameters are easily and quickly effected with Dresser Reducing Couplings, Style 62, furnished in two types—Type 1 for small reductions and Type 2 for large reductions. Each employs same working principle shown in cutaway above.

When your plans are all made—when an absolute dead-line or time penalties have been set—when the pipe line must be completed on schedule to get revenue started or to avoid delaying other parts of the project—then you want a joint that *won't hold you up*—despite rain, snow, swamps, etc.

With "pace-setting" Dresser joints, you are *certain* of getting your line in as fast as you want.

The simple, *standard* Dresser parts permit smooth, steady, uniform speed—faster than the ditcher itself can travel—with no lost motion. No single, slow operation sets up a "bottleneck." Everything is coordinated—moves forward in unison like clock-work. Assembly both above the ditch (safe and practical *only* with flexible Dressers) or in the ditch is *measurably* speeded up.

Results: The length of line laid in a day is the actual length *completed.* Faster installation sharply reduces direct costs, overhead, and interest during construction. And all with the use of unskilled labor—plus joint tightness and flexibility proved for 50 years!



For further details, write for our General Catalog No. 36, a virtual handbook on pipe joints. ● S. R. DRESSER MFG. CO., BRADFORD, PA. *New York:* 17 East 42nd Street; *Chicago:* Peoples Gas Building; *Houston:* Shell Building; *San Francisco:* 1038 Polk Street; *In Canada:* Dresser Mfg. Co., Ltd., 60 Front Street, West, Toronto, Ontario.

DRESSER
PIPE COUPLINGS

the olefine with the isoparaffin. At a later date Ipatiev and Komarewsky *(J. Amer. Chem. Soc., 1936, 58, 913)* succeeded in effecting the combination of olefins with paraffins in the presence of aluminum chloride. Reaction was not limited to isoparaffins and normal paraffins were found to react, although since aluminum halides have been shown by Glazebrook, Phillips and Lovell *(J. Amer. Chem. Soc., 1936, 58, 1944)* and more recently by Montgomery, McAsteer and Franke *(J. Amer. Chem. Soc., 1937, 59, 1768)* to be capable of isomerising normal to isoparaffins, there seems little doubt that isomerisation is an essential preliminary.

The condensation of olefines with paraffins has also been effected noncatalytically by Frey and Hepp *(Ind. Eng. Chem., 1936, 28, 1439)* by employing high temperatures and pressures (510° C. and 300 atm. respectively) and using a large excess of paraffin. The formation of the hydrocarbons to be expected by straightforward condensation was demonstrated but the yields were low.

The production of iso-octane by the direct combination of isobutene with isobutane is a particularly attractive problem for investigation. Not only would such a reaction increase the potential supply of iso-octane but it would eliminate hydrogenation and at the same time find a use for isobutane, a hydrocarbon having at the present time little more than fuel value. The ease with which it has been found possible to carry out this reaction and obtain excellent yields under surprisingly mild conditions still remains a source of astonishment to the authors. Thus isobutene and isobutane react readily at ordinary temperatures in the presence of sulphuric acid (97 per cent) to give a product consisting essentially of isoparaffins of high octane rating and containing, particularly under certain conditions of operation, a high proportion of iso-octanes.

Although several theories have been advanced to explain the mechanism of olefine polymerisation, none can really be considered entirely satisfactory, probably because more than one type of reaction is involved. Undoubtedly secondary reactions, in particular those involving isomerisation, obscure the issue by making it difficult to distinguish the primary reaction products. This is particularly true of reactions involving acid polymerisation, especially those using phosphoric acid, which necessitate operating under comparatively drastic conditions of temperature and pressure. Whatever the mechanism of polymerisation, the first step appears to be the formation of an active molecule, fragment or ion possessing extremely reactive properties. It can, for example, react with a second olefine molecule either similar to that from which it was itself derived to form a true polymer or with a dissimilar olefine molecule to give a condensation product (poly-condensation). Similarly, reaction can take place with alcohols to give ethers and with aromatic hydrocarbons to form the corresponding alkyl derivatives. The active group or molecule is thus able to react with hydrogen atoms in certain molecules or configurations with considerable ease. The addition of olefines to aromatic hydrocarbons is of especial interest owing to the resemblance in the behavior of hydrogen atoms attached to the aromatic nucleus and those attached to the tertiary carbon atom of isoparaffins.

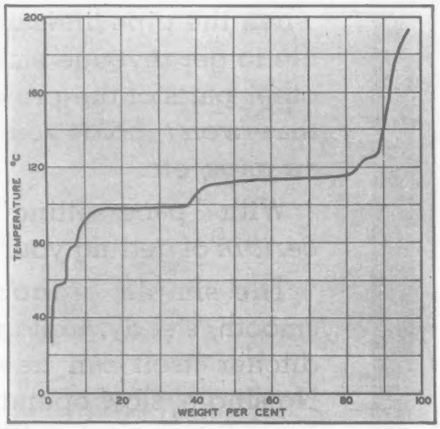


Fig. 5—Distillation curve (25-plate column) of product from condensation of butene-2 and excess isobutane at 20° C.
C_4H_8 : C_4H_{10} ratio = 1 : 4 (run 121)

The inertness usually attributed to paraffins has, particularly in recent years, been shown to be much less marked than had been formerly supposed. Furthermore, it has become increasingly obvious that isoparaffins are far more reactive than the corresponding normal members, the increased activity centering round the tertiary carbon atom. Like the hydrogen atom of the aromatic nucleus this is readily attacked by such reagents as chlorsulphonic and nitric acids, reacts readily with acid chlorides in the presence of aluminum chloride and may be replaced by chlorine under very mild conditions *(cf. Schaarschmidt, Petroleum, 1932, 28, No. 12 1-4)*.

The reaction of olefines with aromatic hydrocarbons, first observed by Brochet *(Compt. rend. 1893, 117, 115)*, has been investigated by a number of workers. More recently Ipatiev and his collaborators *(J. Amer. Chem. Soc., 1936, 58, 919)* have shown that the reaction can be carried out by adding the olefine to an agitated and well-cooled mixture of the aromatic hydrocarbon and concentrated sulphuric acid to give a good yield of the corresponding alkylated hydrocarbons. It was later shown *(J. Amer. Chem. Soc., 1936, 58, 1056)* that di-isobutene under similar conditions behaved abnormally, reacting as though depolymerised and giving tertiary butyl derivatives.

The possibility of extending this type of reaction to olefines and isoparaffins therefore appeared to be the obvious line of attack and an attempt was made to condense di-isobutene with iso-butane under conditions similar to those employed by Ipatiev and Pines. The reaction was found to proceed smoothly and to give a good yield of a product having a low gravity and bromine number but boiling over a wide range. After removal of unchanged isobutane by distillation, a fraction was obtained boiling in the gasoline range between 27° and 185° C. This was water-white, fully saturated and constituted the main bulk of the product. From its low gravity

TABLE 1—SUMMARY OF RUNS CARRIED OUT IN LEAD-LINED AUTOCLAVE WITH EQUIMOLECULAR RATIOS OF PARAFFIN AND OLEFINE AND AT A TEMPERATURE 20° C.

Time of addition 90 minutes.
Time of agitation 30 minutes.

Run No.	Reactants: Paraffin	Reactants: Olefine	Conc. of H_2SO_4	Yield % of material >27° C. on olefine taken	Product 27 — 185° C: % on olefine taken	Product 27 — 185° C: S.G. at 60° F.	Product 27 — 185° C: Bromine number Francis	Product 27 — 185° C: Octane rating: Neat	Product 27 — 185° C: Octane rating: + 1.5 cc. T.E.L.	Residue: % on olefine taken	Residue: S.G. at 60° F.	Residue: Bromine number Francis
42A	Isobutane	Di-isobutylene	96.9	165	136	.705	<1	90.5	98	22	.783	14
30	Isobutane	Tri-isobutylene	96.9	163	138	.704	<1	88.7	98.9	20.5	.782	3.5
49												
63	Isobutane	B.I.B. (105.5°-112° C.)	97	158	135	.707	<1	87.0	97.9	20	.784	15
71	Isobutane	B.I.B. (95°-120° C.)	97	164	137	.703	<1	89.4	99.5	22.9	.7815	14
26	Isobutane	Polymer gasoline (80-120° C.)	97	...	...	...	...	84.6	95.5 (+2 cc.)	...	...	...
40	Isobutane	Propylene*	100.6	150	122	.698	<1	82.5	93.3	23	.774	2.5
62	Isobutane	Butene-2	97	164	148	.706	<1	90.2	100.3	14.8	.785	10
97	Isobutane	Butene-1	97	159	139	.708	2	89.1	98.1‡	20.5	...	...
73	Isobutane	Trimethylethylene	97	152	121.5	.706	1	86.1	98.5	26.5	.786	19
77	Isopentane	Di-isobutylene†	97	159	120	.712	<1	79.7	90.4	38.4	.787	23
56	Isohexane (2-Methyl-pentane)	Di-isobutylene	97	217 (after removal of unchanged isoparaffin)	159.5	.6955	<1	77.6	...	54.3	.785	20

*Temperature 30° C. †The product was cut at 40° instead of 27° in order to remove n-pentane, originally present as impurity in isopentane. ‡1.0 cc. T.E.L./(Imperial) gallon.

TABLE 2—EFFECT OF VARYING RATIO OF REACTANTS

Di-isobutene and isobutane at 20° C. using 96.9 per cent acid.
Time of addition: 90 min. Time of stirring: 30 min.

Run No.	Isobutane: di-isobutane ratio	Product >27° C. A.S.T.M. Distillation: % on olefine taken	I.B.P., °C.	2%	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	F.B.P. °C.	% T.D.	% Res.	Product 27 — 185° C. Engine Test: % on olefine taken	Bromine No.	Sp. Gr. at 15.6° C.	% in H.O.S.	Neat	Neat +1.5 cc. T.E.L.	Residue: % on olefine taken	Bromine No.	Sp. Gr. at 15.6° C.
42A	1:1	165	38	45.5	53	66.5	94	105	112.5	117.5	125.5	137.5	160.5	192	257	97.5	1.5	136	<1	.705	71.2	90.5	98	22	14	.783
51*	1:1	167	35.5	50	63.5	78.5	98.5	108	114.5	120.5	128.5	140	165	200	264.5	97.5	1.5	142	<1	.701	71.6	90.8	99.2	19.6	10	.782
55	2:1	184	33	39	49	64	89	101	107	112	118.5	128	148	194	230	96.5	1	158	<1	.700	71.1	91.3	98.9	14.8	9.5	.782
59	4:1	190†	36.5	55	68	81	96.5	103	107	110.5	114.5	120	133.5	172	220	97.5	1.5	167‡	<1	.705	72.3	92.2	101	10.8	10	.777

*Repeat run with improved stirrer. †An engine test on the product boiling over 27° C. (i.e. including the residue) gave 90.6 Octane No. and +1.5 cc. T.E.L. gal. 100 O.N. ‡Sulphur .01 per cent.

and high octane rating (approximately 90 O.N. by the C.F.R. Motor Method) it obviously consisted largely, if not entirely, of isoparaffins. The residue, pale yellow in color, also apparently consisted substantially of isoparaffins together with some olefinic hydrocarbons. The octane number of this material, about 85 O.N., confirmed its high isoparaffin content also.

Further investigation showed that the reaction was general in character and could be applied to a variety of isoparaffins and olefines. Of the former so far examined, isobutane, isopentane and isohexane (2-methylpentane) were found to react readily, although iso-octane (2.2.4 trimethylpentane) failed to do so.[1] The olefines investigated included propylene, butene-1, butene-2, isobutene and its di- and tri-merides, trimethylethylene and the butene-isobutene condensation product (B.I.B.), all of which reacted smoothly and gave good yields of saturated products boiling in the gasoline range.

As was to be anticipated, no combination apparently occurred when *n*-butane was substituted for isobutane in the reaction with di-isobutene, the product being that ordinarily obtained when the latter is treated alone with acid under similar conditions.

Not all olefines appear to react with equal facility, the ease with which polymerisation takes place under the conditions of the reaction being an important factor in determining the extent to which the isoparaffin condensation occurs. Thus, an olefine which is easily polymerised by concentrated acid will condense smoothly with isoparaffin under similar conditions. For example, isobutene and trimethylethylene are polymerised vigorously at 20° C. by 97 per cent acid and both condense readily with isobutane under these conditions. Propylene is not so easily polymerized and slightly more drastic conditions, namely, higher acid concentration and increased temperature are necessary to obtain satisfactory results.

The fact that certain olefines may be used in their polymerised form and yet react as though depolymerised to the corresponding monomers is of considerable interest and importance. How far this is generally applicable is at yet unknown. Both di- and tri-isobutenes behave in this way, as does also the butene-isobutene condensation product (B.I.B. or Selecto Polymer) which reacts as though it were an equivalent mixture of butene and isobutene. Furthermore, since an 80-120° C. cut from Polymer Gasoline gave a product similar to that obtained from the C_3 and C_4 olefins, from which it had been derived, it appears probable that this type of polymer also undergoes depolymerisation or scission in the same way. The breaking of the polymer molecule where union originally took place shows a definite weakness at this point which, at least in the C_8 series, persists even after hydrogenation. Thus, both iso-octane (2.2.4-trimethylpentane) and the hydrogenated butene-isobutene condensation product (largely 2.2.3-trimethylpentane) are broken down by prolonged stirring with 97 per cent acid at ordinary temperatures to give, along with other hydrocarbons *(cf. Brooks, Cleaton and Carter, J. Res. N.B.S., 1937, 19, 319-333)*, isobutane and a mixture of iso- and *n*-butane, respectively (Figure 1).

The procedure involved in carrying out the reaction is simple and does not necessitate the use of high temperatures or pressures, the following description of the method adopted for the di-isobutene-isobutane reaction being typical.

Sulphuric acid (97 per cent) and isobutane are placed in a vessel, capable of withstanding low pressures, fitted with an efficient stirrer and jacketed so that it can be maintained at any desired temperature by the circulation of hot or cold kerosene and the olefine run in during vigorous agitation over a period of 90 minutes. The temperature is maintained at 20° C. by the circulation of cold kerosene which removes heat liberated in the reaction. During the time the pressure falls from 45-50 pounds per square inch gauge to atmospheric. When addition is complete agitation is continued for a further 30 minutes after which the reaction product is cooled down to facilitate working up. This entails removing the acid—usually pale brown in color, darkening rapidly on contact with air—and neutralising the hydrocarbon layer with a caustic soda wash. Since the product always contains unchanged isobutane, this is recovered by distillation. The residual isobutane-free product is water-white in colour, possesses a pleasant odour characteristic of isoparaffins, a bromine number *(Francis)* of 2-5 and a specific gravity of .700-.715/15.6° C. The distillation is continued until the column head temperature reaches 185° C. The residue which represents about 15 per cent of the yield is usually pale yellow to brown in colour, has a bromine number *(Francis)* of approximately 14 and a gravity of .783/15.6°C.

The fraction boiling up to 185° C. has a pleasant sweet odour and is entirely saturated. It has specific gravity .705/15.6° C. and an octane rating of 90 O.N. (C.F.R. Motor Method) rising to 100 O.N. on the addition of 1.5 cc. T.E.L. per (Imperial) gallon. The yield of this fraction is generally 140 per cent based upon the olefine taken.[2]

The sulphur contents of both the 27-185° C. fraction and the residue are exceedingly low, which no doubt accounts in part for the good lead response. When working with certain olefines, e.g. proplyene and to a less marked extent butene-1, if complete neutralisation has not been effected, the sulphur content of the crude product is somewhat higher owing to the presence of traces of sulphuric esters. During the subsequent distillation these tend to decompose and lead to considerable charring and sulphur dioxide formation. The production of these bodies is, however, confined to those olefines which form comparatively stable sulphates, the crude products from the majority of olefines requiring only a very slight alkali wash before distillation.

Only in exceptional instances has any refining treatment proved necessary for the final product, when a small soda wash was effective, i.e. either when sulphur dioxide has been formed by the decomposition of sulphuric esters or when traces of hydrogen sulphides have been produced during distillation.

A summar of the results obtained is given in Table 1.

It will be observed that the most promising results were obtained from the reactions involving the condensation of isobutane with the polyisobutenes, the butenes and the butene-isobutene condensation product. All the products from these reactions had octane ratings of approximately 90 O.N. which on the addition of 1.5 cc. T.E.L. per (Imperial) gallon rose to 98-100 O.N. The yields varied from 146-164 per cent, based upon the olefine taken, i.e. 73-82 per cent of that theoretically possible, assuming the combination of one molecule of isoparaffin with one of a simple olefine or, with polymerides and condensation products which appear to depolymerise, one molecule of isoparaffin for each molecule of parent olefine formed.

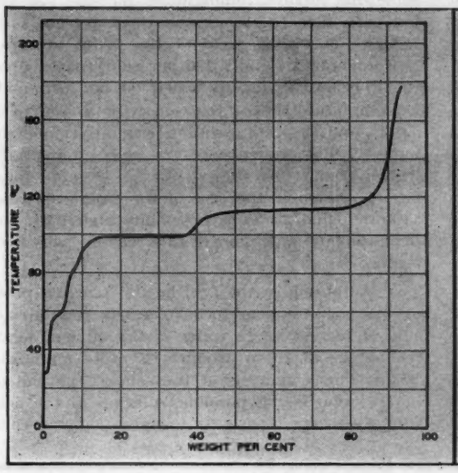


Fig. 6—Distillation curve (25-plate column) of product from condensation of butene-1 and excess isobutane at 20° C.
C_4H_8 : C_4H_{10} ratio = 1 : 4 (run 123)

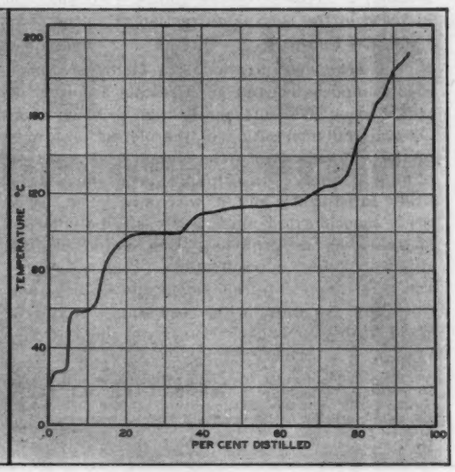


Fig. 7—Distillation curve of product from condensation of octene fraction of butene-isobutene mixed polymer and isobutane at 20° C.
C_8H_{16} : C_4H_{10} ratio = 1 : 8 (run 72)

Isobutane-Isobutene Reaction

Since the condensation of isobutane with isobutene and its polymers was found to give identical products, the latter have been employed for most of the experiments carried out on this reaction. Owing to the promising nature of the results and the value of the products obtained, the effect of variation in the reaction conditions has been studied in some detail.

Of the conditions affecting the reaction, the temperature, the ratio of the reactants and the acid concentration appear to be the most important.

The optimum reaction temperature when using 97 per cent acid lies in the region of 20° C. At higher temperatures there is a considerable amount of oxidation with formation of sulphur dioxide and fouling of the acid; the product is also slightly inferior to octane rating. At —10° C. while there is slight improvement in the octane rating of the product, the yield is appreciably lower and a considerable amount of high-boiling residue is formed.

Variation in the ratio of the reactants produce a greater and more useful effect, as can be seen from Table 2 in which are shown the results obtained when an increased proportion of isobutane is employed. Not only does an excess of the isoparaffin over that required for equi-molecular proportions of isobutane to "isobutene" lead to

[1] An attempt was made to induce methylcyclohexane, which also possesses a hydrogen atom attached to a tertiary carbon atom, to react, but failed possibly owing to some steric effect.

[2] For convenience, yields are based upon the weight of olefine taken. The theoretical yield for the di-isobutene-isobutane reaction is thus 204 per cent.

TABLE 3—UNSATURATED C_4 CUT FROM CRACKING UNIT STABILISERS. RATIO OLEFINE : ISOBUTANE 1:3*

Saturated C_4 cut (69 per cent Isobutane)
Temperature: 20° C. Acid: 96.9 per cent.
Time of addition: 90 min. Time of stirring: 30 min.

	Product >27° C.																Fraction b.p. 27—185° C.					Residue >185° C.		
																			Oct. No.					
Run No.	% based on olefines taken	S.G. 15.6° C.	Br. No. (Francis)	I.B.P. °C.	2%	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	F.B.P. °C.	% based on olefines taken	S.G. 15.6° C.	Br. No. (Francis)	Neat	Neat+1cc. TEL. per (Imp.) gal.	% based on olefines taken	S.G. 15.6° C.	Br. No. (Francis)
150†	178	.699	1	34	46	56.5	73	94	102	106	108.5	112	113	129	183	229	162	.698	<1	90.7	98.0	16	.781	15
119‡	165	.703	2	57	67	78	88	97.5	102	105	107.5	110.5	115	121	146	218	153	.701	<1	91.8	99.7	11	.795	24

*The quantities of these fractions were selected to give an olefine : isobutane ratio of 1:3, due allowance being made for the isobutane content of the unsaturated material.
†Unsaturated C_4 cut from H.P. Cracking Unit. Unsaturated content 57 per cent. Butadiene 3.6 per cent.
‡Unsaturated C_4 cut from L.P. Cracking Unit. Unsaturated content 95 per cent. Butadiene 22.7 per cent. Recovered butanes contained less than 0.2 per cent butadiene.

an increased yield but there is considerable reduction in the amount of high-boiling residue[3]. At the same time a definite increase in the octane rating of the fraction boiling between 27-185° C. occurs and the crude product distilled through a 25-plate column shows a considerable increase in the iso-octane fraction (Figures 2 and 3. Cf. also Figure 4).

The acid concentration is a factor of considerable importance and good results are only obtained when it is sufficiently high to bring about vigorous polymerisation of the olefine. For most of the latter examined the commercial acid, containing 97 per cent sulphuric acid, proved entirely satisfactory and it was only when, as already mentioned, a much less easily polymerised olefine such as propylene was employed, that slightly higher concentrations were necessary. Too high a concentration invariably leads to considerable oxidation with resultant sulphur dioxide formation and charring; the yield is then appreciably lower and has an inferior octane rating. On the other hand, the effectiveness of the acid falls away comparatively rapidly when the concentration falls below the optimum. This can be to some extent overcome by employing a somewhat higher temperature for the reaction but even then the results obtained are not satisfactory. Thus, the yield of the 27-185° C. fraction amounted to only 120 per cent (based upon the di-isobutene taken) when 90 per cent acid was employed in the reaction with isobutane at 50° C. and the octane rating was only 87 octane number. The presence of traces of unsaturated hydrocarbons was shown by the bromine number (4) which in the case of the residue proved, as anticipated, to be exceptionally high (55). Sulphur dioxide formation in this reaction was very marked.

The dilution of the acid by the reaction products does not appear to have nearly such an adverse effect as when water is the diluent. Since the nature of these products is quite unknown, a satisfactory analysis of the acid at the end of the reaction is not possible, dilution of the acid with ice water apparently bringing about decomposition with the formation of a highly unsaturated oil of high gravity possibly similar to those obtained by Ipatiev and Pines *(J. Org. Chem., 1936, 1, 477)*, from the action of sulphuric acid on di-isobutene. As far as can be judged, however, the amount of water formed in the reaction is not great and organic products constitute the main diluents.

The effect of varying the time taken to add the olefine and during which agitation is continued when the addition is completed was not found to be great and the optimum conditions are probably determined by the apparatus. It was, however, observed that the vigour of the agitation has an appreciable effect, extremely vigorous agitation giving a higher yield of useful material of improved octane rating.

The fractionation of the products from di- and tri-isobutene through a 25-plate column indicated that definite individual hydrocarbons or groups of hydrocarbons were present in both and that these were identical. The relative proportions in which they are present, however, is determined by reaction conditions, particularly by the ratio of iso-paraffin to olefine employed. Un-

[3]The crude product obtained when using a 4:1 ratio of isobutane: "isobutene" actually had a final boiling point of 220° and an octane rating of 90.6 O.N. which upon the addition of 1.5 cc. T.E.L. per (Imperial) gallon rose to 100.0 O.N.

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der similar conditions of reaction there is such a remarkable similarity between the distillation curves of the products that they are practically superimposable.

Amongst the hydrocarbons so far identified, are isopentane, 2.3-dimethylbutane, 2.3- and 2.4-dimethylpentanes, 2.2.4-trimethylpentane, 2.5-dimethylhexane and 2.2.5-trimethylhexane. Several other hydrocarbons have been isolated but their identification has not yet been possible owing to the lack of reliable data concerning the physical properties of the higher boiling paraffins. No indications have been obtained at any time of the presence of normal paraffins in the products from any of these reactions which, as already stated, appear to be entirely isoparaffinic in composition.

The B.I.B.-Isobutane Reaction

The condensation of butene-2, prepared by the dehydration of secondary butyl alcohol and containing approximately 0.5 per cent isobutene proceeds smoothly in the presence of 97 per cent acid at 20° C. The reaction product closely resembles that obtained under similar circumstances from isobutene both in yield and octane rating while the distillation curve (Figure 5) obtained by means of a 25-plate column appears to indicate the presence of similar hydrocarbons or

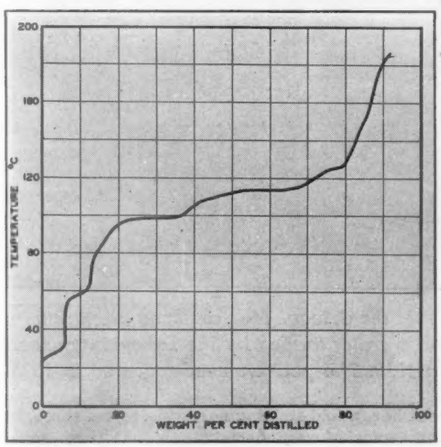

Fig. 8.—Distillation curve (25-plate column) of product from condensation of unsaturated C_4 cut and excess isobutane (69 per cent concentrated) at 20° C. Unsaturated : isobutane ratio = 1 : 3 (run 150)

groups of hydrocarbons. This surprising conclusion has not yet been completely proved as time has not permitted the identification of all the hydrocarbons formed. There is, however, no doubt that considerable quantities of 2.2.4-trimethylpentane are produced.

Similar results were obtained with butene-1 although the reaction did not proceed quite so readily as with butene-2. The quantity and quality of the product were however comparable (Figure 6).

The B.I.R.-Isobutane Reaction

The results obtained with the normal butenes coupled with the apparent depolymerisation of the isobutene polymers under reaction conditions suggested that the di-isobutene might effectively be replaced by the butene-isobutene condensation product. Such a reaction if successful and with a satisfactory product would, owing to the much higher yield of B.I.B. obtainable from a definite quantity of C_4 cut, increase very considerably the potential supply of 90 octane fuel.

Preliminary experiments carried out on a B.I.B. cut boiling over the range 105.5-112° C. using 97 per cent acid at 20° C. were found to proceed normally, yielding a saturated product of good octane rating, although both yield and octane rating were slightly lower than those obtained

(Continued on Page 58)

TABLE 4—YIELDS OF HIGH OCTANE ISOPARAFFINS AVAILABLE FROM C_4 OLEFINES AND THEIR POLYMERS OR CO-POLYMERS

	From diisobutene by hydrogenation (a)	From poly-isobutene and isobutane (b)	From B.I.B. by hydrogenation (c)	From B.I.B. and isobutane (d)	From C_4-cut and isobutane (e)
Yields per unit of isobutene	0.7	1.5(f)	1.5	2.3(f)	4.2(f)
Octane number C.F.R. Motor Method	98-100	92	95	91	91

(a) Based upon 70 per cent conversion of isobutene to diisobutene.
(b) The crude acid polymerisation product may be used.
(c) Based upon a conservative conversion figure of 1.8. An 85 per cent fraction (b.p. 95-120° C.) thus gives 1.5 for the useful product.
(d) Based on an 85 per cent fraction. A correspondingly higher yield is possible by taking a wider fraction (b.p. 95-180° F.)
(e) C_4-cut ex H.P. cracking units. Total unsats. 56 per cent, isobutene 20 per cent.
(f) The figures in the second, fourth and fifth columns are based upon an economical acid consumption.

TABLE 5—YIELD OF ISO-OCTANE GASOLINE BASED UPON UNIT QUANTITY OF ISOBUTENE

	From D.I.B. by hydrogenation	From poly-isobutene and isobutane	From B.I.B. by hydrogenation	From B.I.B. and isobutane	From C_4-cut and isobutane
Yield of 100-octane gasoline per unit of isobutene	1.27	2.0	2.5	3.1	5.6
Composition:					
Isoparaffin base	55	75	60	75	75
Gasoline cut*	45	25	40	25	25
TEL/gal. (Imp.)	3.5	2.6	2.9	2.6	2.6

*Octane number 70 (C.F.R. Motor Method).

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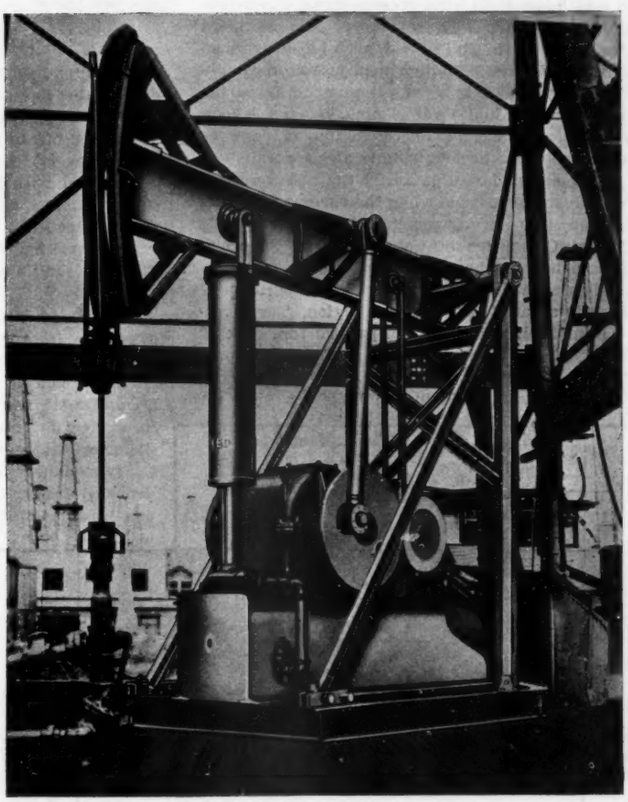

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Lakeview District Illustrat e of Detailed Reservoir

By T. P. SANDERS

The Lakeview field of California is only a small portion of the Midway-Sunset field, but its history is unique. Although the first Lakeview well was the state's most spectacular gusher, the pool remained virtually undrilled for 25 years after its discovery. This fact, which in itself is one of the oddities of the industry, was due to a misinterpretation of the unexampled subsurface conditions.

More or less by accident the Lakeview pool was rediscovered three years ago, and now it is marked by 78 producing wells. Detailed study has revealed a most interesting type of reservoir in which the fluid level recedes down dip as the oil is withdrawn. So regular is this recession that the drop in fluid level may be determined by the volume of oil withdrawn, just as in a tank. For every 51,000 bbls. of oil pumped from the reservoir the fluid level is now lowered 1 foot. With this knowledge the calculation of reserves in the pool has become simple and accurate.

A thorough investigation of the reservoir was recently made possible when the various operators entered into an agreement sponsored by the Central Committee of California Oil Producers. Several benefits have been derived from this investigation which show the value of geological work in an area of settled production. The investigation itself qualifies as a pattern for work of this kind. In such an analysis the field's past history is of great importance.

History was made in the Lakeview field on March 15, 1910, when the discovery well, the famous "Lakeview gusher" came in to produce 8,250,000 bbls. out of control from a depth of 2,225 feet. A large crater was formed, and the flow continued for 544 days. A rate of about 40,000 bbls. per day was maintained for sometime, and it is believed that the peak rate of production reached was 65,000 bbls. per day. The output had to be stored in reservoirs made by damming the surrounding gullies. Evaporation and gopher holes took heavy toll, but a total of 4,737,630 bbls. of oil were marketed, depressing the market value of 21-gravity oil down to 25 cents per barrel.

Famous Gusher

On September 9, 1911, the crater caved in, stopping the flow. Control of Lakeview Oil Co. was then bought by Union Oil Co., and the well was cleaned out to revive production. Some time later, however, flow ceased, and efforts to pump the well met with little success. The reason for this condition was not known, but in view of present knowledge it seems quite certain that the fluid level had receded down dip to leave the bottom of the famous well in a zone of low-pressure gas.

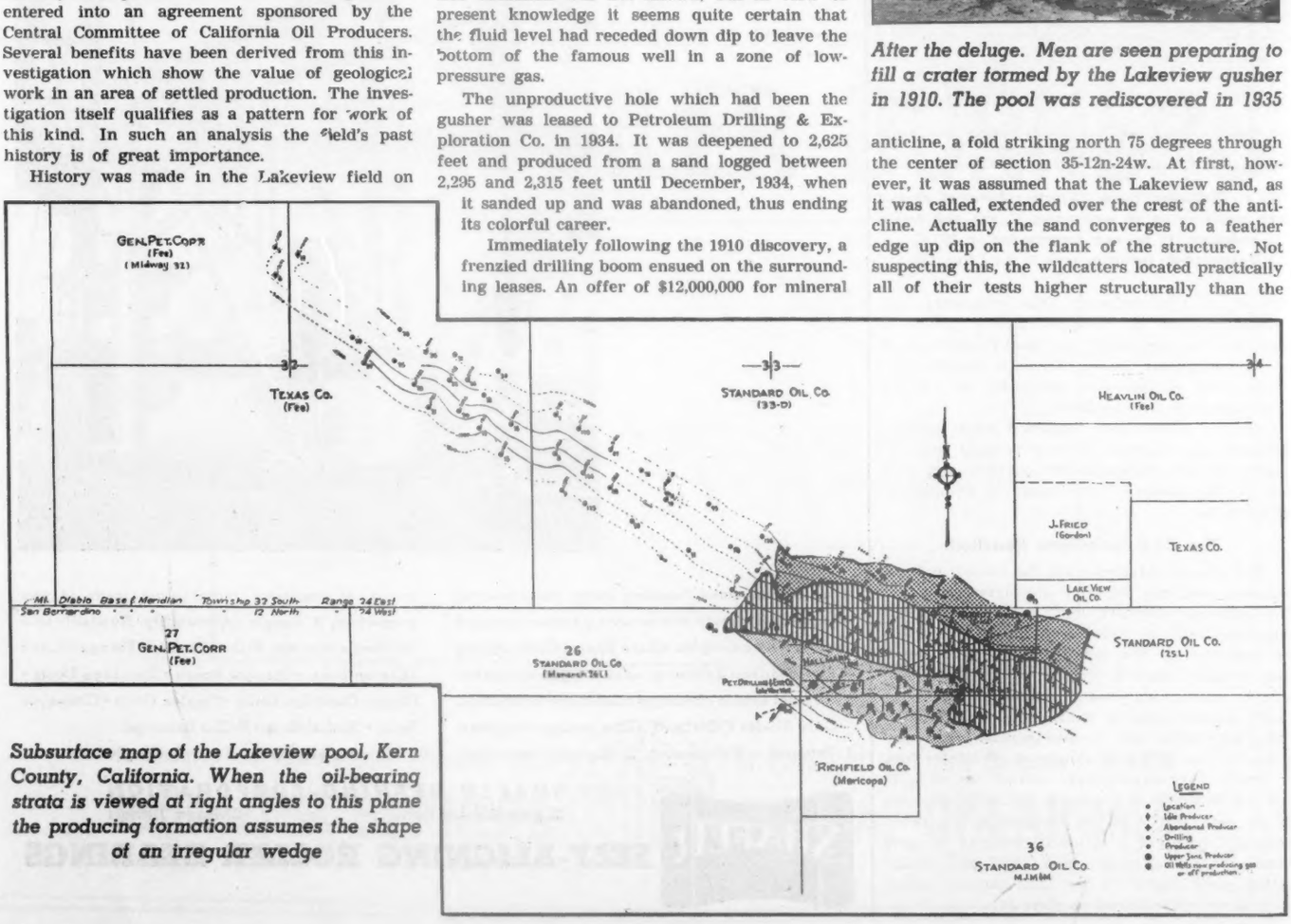
The unproductive hole which had been the gusher was leased to Petroleum Drilling & Exploration Co. in 1934. It was deepened to 2,625 feet and produced from a sand logged between 2,295 and 2,315 feet until December, 1934, when it sanded up and was abandoned, thus ending its colorful career.

Immediately following the 1910 discovery, a frenzied drilling boom ensued on the surrounding leases. An offer of $12,000,000 for mineral rights on the 150 acres which included the gusher was rejected. But due to lack of understanding of the geologic conditions, the boom was disappointing in its results.

It was, of course, known that the gusher was situated on the north flank of the Thirty-five Hill

After the deluge. Men are seen preparing to fill a crater formed by the Lakeview gusher in 1910. The pool was rediscovered in 1935

anticline, a fold striking north 75 degrees through the center of section 35-12n-24w. At first, however, it was assumed that the Lakeview sand, as it was called, extended over the crest of the anticline. Actually the sand converges to a feather edge up dip on the flank of the structure. Not suspecting this, the wildcatters located practically all of their tests higher structurally than the



Subsurface map of the Lakeview pool, Kern County, California. When the oil-bearing strata is viewed at right angles to this plane the producing formation assumes the shape of an irregular wedge

es Value Study

Midway-Sunset field of California. The Lakeview field is a section of this immense area

gusher. This was in keeping with the anticlinal theory, but as a result most of the holes missed the "gusher sand" completely, and those penetrating it found gas instead of oil because the fluid level had receded down dip. This condition ultimately led to the conclusion that the gusher had exhausted its producing sand.

Standard Wells

In 1919 Standard Oil Co. of California drilled two wells into the Lakeview sand, but they came in as pumpers, and due to lack of geologic evidence the sand was not identified. In order to explain this mistake it should be pointed out that four oil sands exist in the area above the Lakeview sand, and two have been found below. Without the advantages of present-day correlation methods, these sands were easily confused.

Both of the Standard wells were located lower structurally than the old gusher, and while they were known for years as abnormally good producers, no explanation was offered for their phenomenal performance. They are designed as No. 18 in fractional section 26-12n-24w; and No. 215 in section 33-32s-24e.

In 1934 Fay L. Wright, a geologist, was making a report on the area for Hallmark Oil Co., and became interested in these two Standard wells. As a result he advised drilling a test between these and the old gusher. Location was made near the northwest corner of fractional section 25, and a well, designated as No. 1-A, came in on January 22, 1935, for 212 bbls. per day of 22-gravity oil from a depth of 2,545 feet. This event marked the second discovery of the Lakeview pool. Since 1935 the productive member of the field has been known as the "Hallmark sand" or "Hallmark zone."

Since the Hallmark discovery well was situated 660 feet due north of the old gusher, it penetrated the sand at a point well below the fluid level. Offsets soon followed, and the oil-bearing portion of the sand was traced both northwest and southeast. In this drilling campaign a number of wells were drilled which failed to find commercial production in the Hallmark sand. Some were too high structurally and produced only low-pressure gas. Others were too low, and found water commingled with the oil pumped from the sand.

In all, 88 wells were drilled as a result of the Hallmark discovery. Of these 78 are now classified as producers. While the Hallmark well was a comparatively small producer, it led to the recovery of more than 12,000,000 bbls. of oil since it was brought in. Above all, it proved that the Lakeview gusher had only blown off the pressure head on the reservoir.

Edge Water

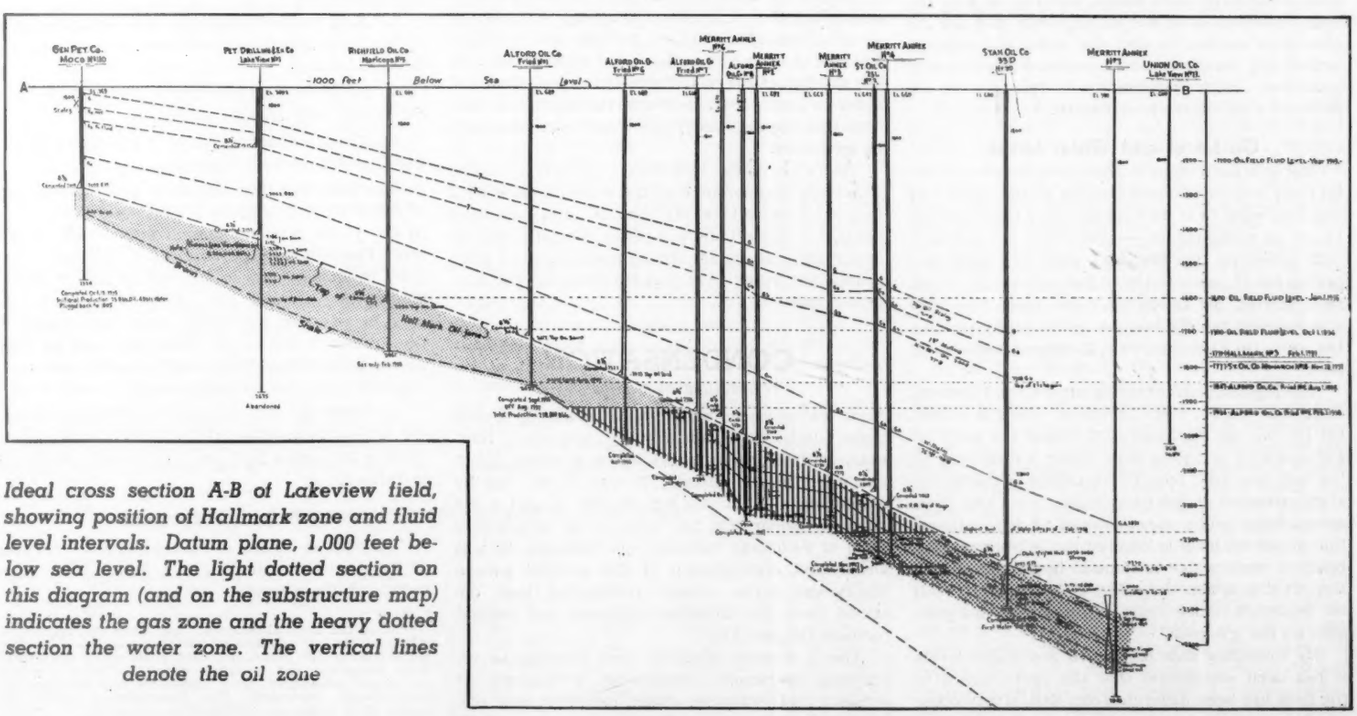
It is interesting to note that during the many years after the Lakeview gusher, while the pool was left practically undisturbed, the edge water did not move in to restore the reservoir's pressure. Herein lies the chief peculiarity in the pool's behavior. Explanation is offered by W. E. Dunlap, who with Fay L. Wright recently completed a comprehensive study of the pool in conjunction with proration matters.

Order Investigation

In recent months, when overproduction became a trying problem in California, the Central Committee of California Oil Producers asked for a 10-day shutdown each month in areas of settled production. In the Lakeview field this request met with counter requests from operators who believed other operators were bringing in water in improperly completed wells. The outcome of the controversy was an agreement calling for not only a 10-day shutdown each month but also for a complete investigation of water troubles and other reservoir conditions.

Little was known of the Hallmark zone before the recent investigation, and there was much difference of opinion. For example, it was not generally recognized that the old gusher had produced from the same zone as Hallmark Oil Co.'s discovery well. Much of the investigation carried on by Dunlap and Wright was necessarily of a geological nature, and while some questions of correlation remain unsettled, a practical working knowledge of subsurface conditions has been derived.

It has been pointed out that the Hallmark oil zone in the Lakeview field in a wedge-shaped sand, converging to a feather edge up dip on the north flank of the Thirty-five Hill anticline. This feather edge lies at an average depth of 2,000 feet in the



Ideal cross section A-B of Lakeview field, showing position of Hallmark zone and fluid level intervals. Datum plane, 1,000 feet below sea level. The light dotted section on this diagram (and on the substructure map) indicates the gas zone and the heavy dotted section the water zone. The vertical lines denote the oil zone

eastern portion of the field, but it is deeper in the western part due mainly to greater surface elevation. The top of the oil zone dips 20 degrees in the northeasterly direction. Water is found down dip in the structure at depths in the neighborhood of 3,200 feet, and this limits production on the northeast.

It is probable that before the time of the Lakeview gusher the top of the reservoir contained very little if any free gas. But with the withdrawal of over 8,000,000 bbls. by the gusher, the pressure was dissipated over the entire reservoir and a zone of low-pressure gas developed above the depressed oil level. This gas zone limits the productive area on the southwest. Its extent is increasing quite rapidly so that wells high on the structure, which were oil wells a year or two ago, are now small gas wells.

The producing area of the Hallmark sand is a strip 2 miles long and between one-eighth and one-quarter of a mile wide. The wells lying along the center of this strip tend to be the most prolific, since they have the greatest thickness of oil sand below the gas and above the water. Alford Oil Co. No. 8 Fried is the field's best well at present because it produces from the thickest sand section. It averaged over 800 bbls. per day for sometime after it was brought in. Other wells completed since the rediscovery have produced from 150 to 700 bbls. per day, and all have come in as pumpers.

The thickness of the Hallmark zone in the explored area varies from 0 to 200 feet. In the eastern portion of the field, in the vicinity of the old gusher, it is thicker than in the western portion. The oil sand is interbedded with shale streaks which persist up dip. These divide the sand into three fingers.

Age of the Hallmark sand is uncertain because it lies at or very near the Pliocene-Miocene contact. For this reason it has been variously classified as Etchegoin (Lower Pliocene), Upper Miocene, and detrital material between Pliocene and Miocene. It is underlain by the Miocene brown shale at positions high on the structure, but down dip another shale interval is found wedging in between the two.

The top of the Hallmark sand is marked by a well-cemented conglomerate, considered basal Etchegoin, which lies conformably on the oil sand.

It is believed that the oil in the Hallmark came from the brown shale below, backing up into the sand reservoir. This theory supposes that the reservoir is isolated so that the water immediately underlying the oil does not communicate with any great body of water down dip. In this way the absence of water drive is explained.

Oil Level and Water Level

Records have made it possible to determine the oil level at five different periods in the history of the Lakeview field. In 1919 oil filled the reservoir up to an elevation of —1,200 feet. By January, 1935, after the two Standard wells had been producing for 16 years, the level had receded to —1,600 feet. During the following three years the level was lowered rapidly because of the many producing wells. On February, 1938, it had reached —1,924 feet.

The highest point of water entry up to February 1938, was —2,275 feet. However, when Standard Oil Co. No. 20 Maricopa D-33 tested the sand on February 15, it found edge water which rose in the hole to —2,050 feet. This established the hydrostatic pressure of the edge water. Since this pressure is balanced by the column of oil, it is believed that as the oil level is lowered the balance may be upset to cause water to come in in greater quantities. In this action the effect of gas pressure will be negligible, since there is practically no pressure on the gas zone.

By compiling data on the oil and water levels it has been established that the performance of the field has been different from that of any other

W. E. Dunlap, who recently completed an analysis of the Lakeview field in conjunction with Fay L. Wright and the Central Committee of California Oil Producers, was "in on the ground floor" in regard to development of this field. He was working as a roughneck on the Lakeview gusher in 1910 when it blew in wild. Thereafter he was kept busy plugging up gopher holes through which oil from the earthen reservoirs flowed underground to find its way to the surface as much as half a mile away.

W. E. DUNLAP

After his graduation from Stanford University in 1915, Dunlap became a tool dresser for Ojai Oil Co. in the Ojai Valley. After two years of work of this type he was appointed resident engineer for Union Oil Co. in the San Joaquin Valley. Promotions followed rapidly, and by 1919 Dunlap was chief petroleum engineer for all divisions of General Petroleum Corp. Then, in 1925, he became chief geologist for Richfield Oil Co. Two years later he was made assistant manager of Richfield's producing department. Another two years and he become manager of the producing department and was elected to the board of directors. In 1931 Mr. Dunlap resigned in order to carry on a private consulting practice in petroleum engineering and geology.

Since 1922, when he helped organize a six-month's curtailment program to take care of the flush production of Santa Fe Springs, Signal Hill, and Huntington Beach, Dunlap has been active in proration matters. He has served three years as chairman of the fact finding committee of the General Curtailment Committee of California. His great interest in curtailment matters led to his appointment by the Central Committee to carry on the Lakeview field investigation.

San Joaquin Valley field except possibly the east flank of the Buena Vista Hills field. This makes it necessary to use a different method of valuation for tax purposes. Production decline curves are misleading because, just as in pumping from a tank, recovery shows little decline until the productive limit is closely aproached.

Before the monthly shutdown periods were inaugurated, the oil level was dropping 12.8 feet per month. Ten-day shutdown periods will decrease the rate of drop by one-third, but even at this rate the fluid-level curve indicates that depletion will occur in April, 1941. However, the same data indicate that approximately 7,000,000 more bbls. will be recovered.

Depletion of the Hallmark zone will not mean wholesale abandonment of the wells, because with four shallower oil-bearing horizons, it is more than likely that at least one will prove to be of economic importance. There are strong possibilities of good production in both the Top Oil zone and the Kinsey Oil zone.

CONDENSATION

(Continued from Page 55)

from di-isobutene under corresponding conditions. Both were considerably improved, however, in later experiments when a wider B.I.B. cut was used. Eventually it was found that by employing a B.I.B. cut b.p. 95-180° C. and a 4:1 ratio of isoparaffin to "butene," a satisfactory yield of 90 octane material was obtained. As was anticipated, fractionation of this product gave a distillation curve closely resembling that obtained from the isobutene-polymers and normal butenes (Figure 7).

The C_4 fraction obtained from cracking or reforming operations consists of a mixture of straight and branched chain paraffins and olefines, in which the normal hydrocarbons predominate, together with a small amount of butadiene. Since, with the exception of the butadienes, the individual unsaturated hydrocarbons have been shown to react satisfactorily with isobutane in the presence of acid, the possibility of utilising the C_4 fraction was investigated. It was at first thought that the butadiene present would have a deleterious effect by forming high-boiling polymers and tarry by-products and methods were therefore considered for its removal. A preliminary experiment with a C_4 cut taken directly from the stabilizer containing approximately 50 per cent unsaturated hydrocarbons (butadiene 3.6 per cent) was however made and found to give an entirely satisfactory product, the butadiene apparently producing no ill effects. This result was confirmed in later experiments; in fact it was found that a C_4 fraction containing as high as 20 per cent of butadiene could be used without giving trouble.

In place of the pure isobutane used in the earlier work a concentrate containing 70 per cent was tried with entirely satisfactory results and this material was consequently used for most of the later experiments (Fig. 8).

The importance of these results is obvious. It enables a good yield of a 90 octane isoparaffinic fuel to be produced in one operation from the reaction, under simple conditions, of a crude C_4 fraction taken from a cracking plant stabiliser with a concentrated isobutane fraction using a cheap readily available condensing agent.

100 Octane Fuels

At the present time the production of high octane isoparaffins suitable for 100 octane fuels is dependent upon isobutene and the potential supply of such blending materials determined by the supply of isobutene available.

With the discovery of the isoparaffin condensation reaction five methods of producing high octane isoparaffinic fuel from this isobutene[4] became available namely,

1. Acid polymerisation to di-isobutene (cold acid process) followed by hydrogenation to iso-octane (2.2.4-trimethylpentane),

2. Selective polymerisation also followed by hydrogenation,

3. Acid polymerisation by cold acid process to di- and tri-isobutenes followed by condensation with isobutane,

4. Selective polymerisation followed by condensation with isobutane, and

5. Direct condensation of the isobutene-bearing C_4 fraction with isobutane.

The products from all these processes consist of isoparaffins but there is considerable variation in the yields both in amount and octane rating. Since however a greatly increased yield may more than compensate for a product of lower octane rating the value of any particular process can only be assessed by taking both into consideration. Table 4 shows the potential yield of high octane isoparaffins producible by the five processes together with their octane ratings.

By blending with tetraethyl lead and a special cut of Iranian gasoline, O.N. 70, the relative quantities of 100-octane fuel may be produced as shown in Table 5.

Acknowledgement

We wish to record our thanks to the chairman of the Anglo-Iranian Oil Co., Ltd., for permission to publish these results.

[4]Since the normal butenes, propylene and trimethylethylene are all capable of yielding suitable blending materials for 100 octane aviation fuels when condensed with isobutane, the potential supply of such fuels is no longer dependent upon isobutene and is therefore considerably increased. The determining factor becomes then isobutane rather than isobutene.

Progress in METALS

By W. L. NELSON

Selection of Steels for Production Tools

Abstract: "Some Factors Affecting the Selection of Steel for Oil-Production Tools," by Harry W. McQuaid of the Republic Steel Corp. Presented before Western Metal Congress in March 1938.

Abrasion and toughness.—"With drilling equipment it is almost trite to state that resistance to abrasion and toughness are of primary importance." Yet these two properties are diametrically opposed because an increased resistance to wear is dependent primarily on a high carbon content whereas toughness is impaired by an increase in carbon content. Thus, the problem involves a compromise in carbon content that will give high wear resistance and at the same time a satisfactory degree of toughness. In many instances this situation is being met by the use of carburized or case-hardened parts. By such an operation the carbon content of the steel on the outside of the part is increased without changing the carbon content of the core or inside of the part. This permits a hard wear resistant surface, backed with a tough inner core. Under extreme conditions of abrasion the surface may even be coated with a layer of hard tungsten carbide or similar material.

Although the core is supposed to exhibit properties of toughness, it is thought that the properties of the case or outside of the case-hardened part is of primary importance. The steels that are widely used for case-hardening, such as the S.A.E. 3312, 2515, and 4820 steels, are selected mainly because of the case properties that can be developed with such steels. A fine grain martensite case of these steels shows a minimum strength of about 300,000 pounds per square inch in tension. The above steels are about equally suitable if properly fabricated and heat treated, but in general the S.A.E. 4820 is most widely used with a general trend to adopt a nickel-chromium-molybdenum type containing about 2 per cent of nickel, 0.6 per cent of chromium, and 0.25 per cent of molybdenum. Note that nickel is a constituent of all of the above steels (see Table 1), that nickel strengthens the steel and at the same time does not produce a hard carbide.

In summary, for the most exacting service, the more highly alloyed steels are used, for regular service the alloy steels with about 1 per cent of alloy element are used, and for the most simple services such as washers, pump liners, some gears, etc., carburized plain carbon steels may be used.

Bending and torsion.—Examples of equipment that must withstand such action are shafting for kellys, tool joints and reamer bodies, rods on pumps, and such parts as drill pipe and collars. These parts tend to fail by fatigue and fatigue strength is vitally dependent on notch brittleness or sensitivity to failure at a notch in the material. For shafts that are subjected to higher stresses than those permitted by plain carbon steels, the following alloy steels are employed—S.A.E. 3140, 4140, 4640, 5140, and 6150 (see Table 1). Such steels may be cooled less rapidly in quenching operations and hence do not lose as much strength by cooling stresses as do the plain carbon steels. Although these steels can be machined in some shops when heat treated to a Brinell hardness of 400-440 before finishing, in the oil industry the hardness is usually limited to about 320 Brinell because oil-field tongs are unable to grip a material exceeding a hardness of 321 Brinell. Carbon content above the 0.5 per cent indicated for most of the above steels result in too much hardness, although from the standpoint of fatigue strength, harder higher carbon steels would be more satisfactory. The steel industry is gradually improving its fabrication operations by control of grain size and control of hardening—and these advances are becoming apparent in a gradual increase in the amount of carbon that can be used. For this reason steels containing more than the 0.5 per cent specified above may soon be available, and such steels will exhibit even a greater resistance to fatigue.

"In tool joints, shafts and other members subjected to torsional and bending loads, the selection of the analysis from the medium carbon alloy group can be made of any one of a dozen analyses with success if the steel is made to fit the given application. Thus parts of almost identical properties can be made from S.A.E. 3145, S.A.E. 4640, S.A.E. 4140, S.A.E. 6145, etc., provided the other factors are varied to suit the analysis and application. This means grain size control, annealing and heat treating cycles to fit, and quenching equipment to control the hardening, etc. It is for this reason that we find two competitive producers using different analyses with apparently equivalent results.

"In all applications involving toughness as a desired property, the design is of especial importance. From an engineering viewpoint the toughness of a given part is measured by its ability to distribute the applied stress. Design plays an important part in this ability to distribute stresses and the designer of oil-field equipment could well afford to spend extra time in an effort to eliminate points of stress concentration. The worst offender in this respect is the notch, but sharp corners and sudden changes in section are equally important.

"Notches are quite common in such parts as drill collars, threaded parts, tool joints, pump rods and in fact almost every important part. Drill collars with shoulders cut for elevators are common but the concentration of stresses due to the notch and the reduction in section reduce the affective strength greatly, and drill collars without much stress concentration are to be preferred.

"Sometimes stresses can actually be reduced by a reduction in section. This is usually the case where a rod or shaft subject to torsion or bending enters a part of larger section. By a gradual reduction in section in the shaft from the point where it meets the larger section the stress can be distributed over a greater length of the rod. Splines and keyways are a constant source of trouble due to stress concentration, and, if possible, the root diameter of the spline or the keyway should be greater than the minimum shaft diameter.

"Grinding cracks are a source of initial fatigue failure, especially in case-hardened work. This is particularly true where two ground surfaces meet.

"Shafts and heat-treated work which is cold straightened are a source of initial fatigue failure and many cases have been known where a change has been made to a more expensive steel because it was not realized that the shaft fatigue failures were due to cold-straightening cracks.

"Before a change is made in steel or treatment a most earnest effort should be made to eliminate possible sources of initial fatigue failures by the elimination of stress raisers regardless of whether they are due to design, grinding, corrosion, or straightening. It is surprising how much more can generally be done in improving the performance of a part by consideration of the above than by an expensive change in steel or treatment."

TABLE 1—CHEMICAL ANALYSES OF STEELS (ABBREVIATED)

S.A.E. No.	Type of steel—	Percentage composition C	Ni	Cr	Mo	Va	Mn
2515	Nickel	0.15	5.0	...	...	...	0.3-0.6
3120	Nickel-chromium	0.20	1.25	0.6	...	...	0.3-0.6
3140	Nickel-chromium	0.40	1.25	0.6	...	...	0.5-0.8
3312	Nickel-chromium, maximum	0.17	3.5	1.5	...	...	0.3-0.6
4120	Chromium-molybdenum	0.20	...	0.65	0.2	...	0.5-0.8
4140	Chromium-molybdenum	0.40	...	0.95	0.2	...	0.5-0.8
4620	Nickel-molybdenum	0.20	1.75	...	0.25	...	0.4-0.7
4640	Nickel-molybdenum	0.40	1.75	...	0.25	...	0.5-0.8
4820	Nickel-molybdenum	0.20	3.5	...	0.25	...	0.4-0.6
5120	Chromium	0.20	...	0.75	...	...	0.3-0.6
5140	Chromium	0.40	...	0.95	...	...	0.5-0.8
6120	Chromium-vanadium	0.20	...	0.95	...	0.18	0.3-0.6
6150	Chromium-vanadium	0.50	...	0.95	...	0.18	0.5-0.8

Metallurgical Terms—Patenting

Patenting is defined by the Society of Automotive Engineers and the American Society for Testing Materials as "heating iron base alloys above the critical temperature range, followed by cooling to below that range in air or in molten lead which is maintained at a temperature of about 70° F.

The purpose of the operation is to produce a sorbitic grain structure, which structure is characterized by a reasonable ductility or lack of brittleness in combination with high strength and hardness. The treatment is usually applied in the wire industry as a finishing treatment or in the case of wire having a high carbon content (eutectoid) as a treatment previous to further wire drawing.

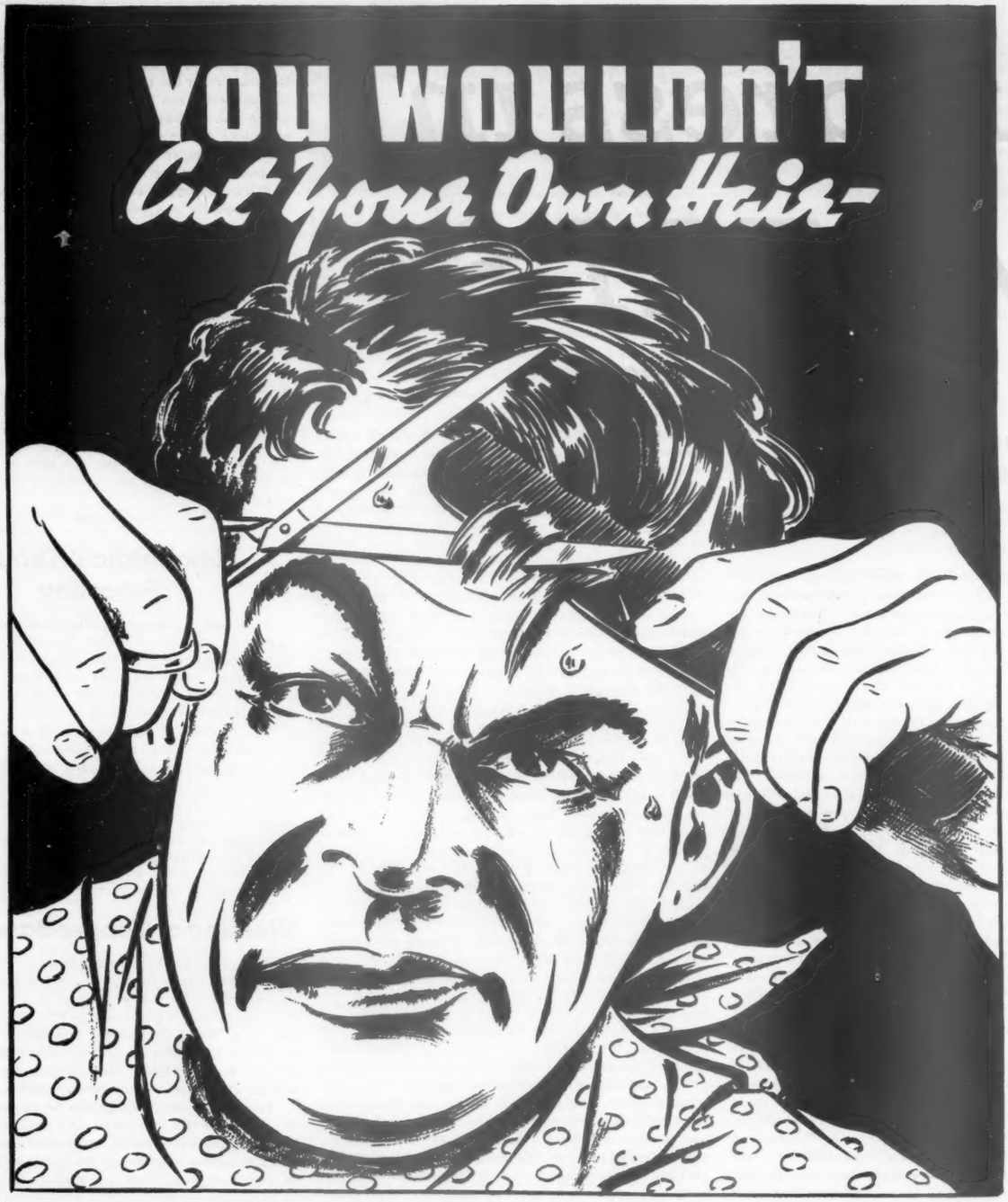
Welding of Copper-Base Alloys

Without doubt the great advances that have been made in the last decades in the welding of the ferrous alloys and metals can be classed as the major if not the greatest single advancement that has been made in the art of metal fabrication. Meanwhile, development in the art of welding copper-base alloys has lagged and in fact, many welders scarcely recognize that copper and its alloys can be successfully welded.

The lack of development can be attributed at least in part to the fact that there are a multitude of copper-base alloys and even small amounts of special elements added to copper may change the welding characteristics to a great degree. Thus, many different modifications of the welding or brazing procedure are necessary rather than the few procedures that are adequate for irons and steels. Among the special elements that are used with copper in copper-base alloys are aluminum, antimony, arsenic, beryllium, lead, iron, manganese, nickel, phosphorus, silver, silicon, zinc, and tin. Obviously, the use of so many alloy elements with copper, requires many different welding modifications.

In an effort to clarify the situation, the Welding Research Committee sponsored by the American Society of Electrical Engineers and the American Welding Society has published a critical review of the literature which refers to over 210 references. This review, entitled "The Welding of Copper and Its Alloys—A Review of the Literature to Jan. 1, 1936" by Ira T. Hooke, was published in the February and March, 1937, issues of the American Welding Society Journal, and reprints are available from the American Brass Co.

Although copper-base alloys are not used as extensively in the petroleum industry as the irons and steels, the industry does use a large amount of copper-base condenser and exchanger equipment as well as many small machine and instrument parts. The welding of copper-base alloys is now in such a degree of development that most of these equipments can be successfully repaired and maintained by means of welding.



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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Explaining Influences of Antiknock Agents in Reducing Knock

A brief explanation is desired of the action of the compound ethyl lead in the gasoline engine. Your kindness in this matter will be appreciated.—W. B.

To explain the mechanism of metallic antidetonators, the assumption of deposition of a metallic film around the nuclear particles of the hydrocarbon so as to prevent a subsequent autoxidation has been advanced. If at a definite state in the cycle of an engine a large number of nuclei centers are established, promoting a partial uniform oxidation of the fuel throughout the mass, then the suppression action of antidetonators may be likened to an auxiliary ignition system having the tendency to oxidize the fuel before the action of the actual flame front in the region of hot and highly compressed gases.

The influence of the metallic film appears not to be supported by the test reported by Olin, Read and Goos, who found that colloidal suspensions of lead and nickel in gasoline were not active as antiknock agents. They suggested that the particles resulting from the decomposition of some metallo-organic antiknock compounds may be activated.

Midgley explains the action as due to the inhibitor absorbing active radiations necessary to insure the propagation of detonation in the gases and to control the velocity of the movement of the flame. The fact that antidetonators decompose with the formation of readily oxidizable particles which, by virtue of their heat of combustion, induce a partial combustion of gases in their immediate vicinity is believed explanatory for the difficulty in the propagation of the flame, the partially burned gases hindering the progress of the flame.

The inhibitory substances may also act by virtue of inertia, as buffers absorbing the active force of "agents" concerned with the transmission of the reaction throughout the mass.

References: Berkman, Morrell and Egloff, Inhibitors in Catalysis, Universal Oil Products Co., Booklet No. 214. Callender, Chim. et Ind., 17, 481, 1927. Charch, Mack and Boord: J. Ind. Eng. Chem., 18,334, 1926. Midgley: Ind. Eng. Chem., 15, 421, 1923. Olin, Read and Goos: Ind. Eng. Chem., 18 2 1316, 1926.

Production and Use of Liquified Hydrocarbon Gases

Can you tell us how much liquefied hydrocarbon gases from petroleum are now sold and who are the most important purchasers or consumers?—S. Y. T.

The U. S. Bureau of Mines, Petroleum Economics Division, makes an annual report concerning the marketing of liquefied gases, from which the information given here has been obtained.

The commercial production of liquefied gases of petroleum origin for the year 1937 was 141,505,000 gallons, representing a gain of 33 per cent over the 1936 sales, which were 106,652,000. The various uses include—domestic purposes, internal-combustion engine fuel, industrial fuel, chemical manufacturing, and gas manufacture. The gases are prepared in commercially pure compounds, such as propane, butane, propane-butane mixtures and pentane. Last year 46,474,000 gallons of propane was produced and nearly (46,694,000 gallons) the same volume of propane-butane mixtures. The pentane deliveries were 2,838,000 gallons.

"About half of the marketed production of liquefied petroleum gases is used for industrial fuel and in the manufacture of chemicals. Liquefied gas reported under these classifications totaled 70,102,000 gallons in 1937 compared with 54,585,000 gallons in 1936. Most of this gain must be credited to the increased use of liquefied petroleum gases in the chemical manufacturing trade, which demand virtually doubled in 1937. The use of liquefied petroleum gases as raw material in the making of chemicals is expanding at a rapid rate as their chemical structure is better understood and new processes for their conversion into desirable products are developed step by step from the experimental to the commercial stage. Liquefied petroleum gases sold to chemical plants are usually cracked or broken down chemically and then are further treated to produce ethylene glycol, alcohols, acetone and other derivatives. Still another process is based on the chlorination of pentane to produce amyl chlorides, which are then converted into other products. The sale of liquefied petroleum gases to chemical plants, which in the past year or two has reached an important volume, bids fair to continue to expand."

Lubricating Oil for Refrigerating Machines and Hydraulic Systems

What lubricating oils are suitable for use in refrigerating machines? What specifications should be followed in addition to cold test?—J. M. L.

The Federal Standard Stock Catalog shows five grades of lubricating oil specified for use in refrigerating machines. These are designated by numbers 8, 10, 20, 30, and 40. The specification limits are indicated in the table:

REFRIGERATING MACHINE OILS

	Specifications				
	8	10	20	30	40
Vis., Say. Univ. at 130° F.	70-90	90-120	120-145	185-205	245-280
Flash, °F. (min.)	315	325	340	350	370
Pour, °F. (max.)	—10	0	0	0	10
Carbon, % (max.)	0.1	0.2	0.3	0.4	0.5
Neutralization No., (max.)	0.1	0.1	0.1	0.1	0.1
Corrosion	None	None	None	None	None

"Refrigerating machine oil shall be refined petroleum oil without the admixture of fatty oils, fatty acids, resins, soaps, or other nonhydrocarbon materials and shall be suitable for the lubrication of the cylinders of refrigerating machines."

These oils may also be used for the lubrication of pneumatic tools, and for hydraulic systems.

Reference: Federal Standard Stock Catalog, Sec. 4, VV-O 581, Nov. 6, 1934.

Nitrogen in Marine Sediments Indicating Formation and Accumulation of Petroleum

Recently I have noticed several references to a method for determining whether a structure is oil-bearing or not by correlating the action of soil nitrogen on chromic acid. So far I have found no information as to the procedure for this analysis. If you can give me information about this and the value of the test I'll appreciate it.—D. M. A

Investigations devoted to a study of sediments related to the formation and accumulation of petroleum utilize the percentage of nitrogen as a means for measuring organic matter. Carbon is the essential component of organic matter but the percentage is not easily determined and the time required for the analysis is a handicap when a large number of samples are to be examined. Nitrogen, while present in marine sediments in a much smaller quantity than carbon, may be quickly determined with a high accuracy; also, the marine deposits contain more nitrogen than do soils.

An extensive report on the source sediments of petroleum has been prepared by Parker D. Trask, from which the material here has been arranged.

Sediments of recent marine origin, collected from many sources, reveal that the ratio of organic carbon to nitrogen is a constant very close to 8.4 $\pm$ 1.0. Rich sediments have a slightly higher C:N ratio than poor deposits. It is assumed that the organic matter is 1.7 times the organic carbon, then the organic content is about 14 times the nitrogen.

Trask used the ordinary Kjeldahl method for determining nitrogen, with mercury as the catalyst and sodium sulfate for raising the boiling point. The quantity of nitrogen in marine deposits was found to vary from 0.1 in near shore sands to 0.56 per cent in fine-grained sediments. The deposits from past geologic ages show a C:N ratio averaging 12, indicating a loss of nitrogen. Trask and Keyte have proposed the nitrogen-reduction ratio, that is a ratio of the reducing power to the organic content of sediment, as expressed in terms of the number of ml. of n/0.4 chromic acid reduced by 100 mgm. of sediment. The lower this nitrogen-reduction ratio is, the greater is the degree of reduction. The ratio is shown as 100 times the nitrogen percentage divided by the reducing power. This ratio ranges between 3 and 6. If the ratios are very much less than the average, 6, the sediments have a high degree of reduction; if greater they have a low degree of reduction. A low nitrogen-reduction ratio is a favorable indication of source beds and a high one unfavorable.

References: Trask, Origin and Environment of Source Sediments of Petroleum, page 41. Trask and Keyte, Degree of Reduction in the East Texas Basin as an Index of Source Beds, The Oil and Gas Journal May 21, 1936, page 21. Trask, One Way of Finding Oil More Cheaply, The Oil and Gas Journal, November 12, 1937, page 120.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Sodium Arsenite

(Sodium meta-arsenite)

Use—Powerful negative catalyst. Acid inhibitor with metals. Insecticide, especially against termites.

Form—Grayish, nearly white, amorphous powder.

Formula—Na_2HAsO_3

Molecular weight—170

Specific gravity—1.87

Solubility—Cold water.

LIMITATIONS

Technical grade purity, 90 per cent.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

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Refiners found ways to use these limestone oils but they always gave trouble largely through the corrosive effects of the sulfur they contained. More than one-half of 1 per cent sulfur content places an oil in the "sour" oil class but in spite of that unfavorable feature millions of barrels of this kind of oil has been produced and is still being used. Producers have found ways to retard the effects of the corrosive sulfur compounds and a good limestone well is now almost as welcome as a good sand producer. In fact, in some instances it has been found gasoline with higher octane values can be made from the sour oil than can be made from some grades of sweet oil.

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The acid is placed in the bottom of the well and works outward and increases the channels either in size or number thus permitting the oil to find exit into the well and be recovered. The products of the reaction between hydrochloric acid and limestone are water soluble and it is therefore assumed they will be washed out into the well and not redeposited to again clog the channels. In well treating it is common practice to mix commercial hydrochloric acid containing about 28 per cent hydrogen chloride and 72 per cent water with about 50 per cent water before it is put in the well. This water dissolves the products of the acid and limestone reaction which will produce calcium and magnesium chlorides. At 32° F. the calcium chloride is 59.2 per cent soluble and the magnesium chloride about 52.5 per cent soluble in water. With higher temperatures more of these materials will go into solution and be produced along with the water which in turn is produced with the oil.

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Several processes have been suggested to dehydrate and desalt crude oils and a few have been tried commercially. Because the properties of emulsified and salty crudes vary widely the mode of treatment will likewise vary. No one method is best suited for all crude oils to be treated and in some instances it is necessary to combine two or more methods to secure the desired results. These treating methods may be classified as heat and pressure, chemical, electrical, centrifugal and filtration.

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The longer the settling time the greater the volume of salt water withdrawn with its accompanying salts. The concentration of salt in the water will be high at first and gradually decrease indicating the water globules carrying salt coalesce in a relatively short time with a longer settling period required for the water with lower salt content.

The temperature to which the emulsion is heated plays an important part in the removal of the soluble salts and it has been found in laboratory experiments that at 400° F. and 300 pounds pressure the percentage of water and salt in the desalted oil decreases with the increase in settling time. At lower temperatures the per cent of water seems to decrease more rapidly than the per cent of salt. This indicates the salt was not completely dissolved in water due to low temperature which did not affect the asphaltic or paraffinic films surrounding the salt crystals. At higher temperatures the effect is reversed and this is an important detail to be remembered in field treatment of emulsions of this type.

It is also recommended that fresh water be added to the emulsion to be treated in order that the salt may more easily be taken into solution. The quantity of water to be added appears to be an optimum of 10 per cent by volume of the oil and the optimum temperature is 400° F. However, the quantity of water added has its effects upon the temperatures required to heat the mixture and at temperatures above 500° F. the critical conditions for water will be approached while amounts of water higher than 10 per cent added will result in the formation of a much thicker emulsion layer.

To summarize the desalting is more effective at temperatures about 400° F. with enough pressure to keep water in liquid form, about 300 pounds per square inch, and approximately 10 per cent of water properly emulsified in oil. At the above conditions smaller emulsion layers are obtained with a very sharp separation of oil-free water.

It has been found that better results are secured in using chemicals for desalting if the chemical is added to the water rather than to the oil. When added in this manner the chemical is necessarily near to the water-oil interface. However, it has been determined by laboratory and field work that no one set of conditions can be prescribed to fit all chemical treatments. However, there are a few conditions which seem to be uniformly necessary for obtaining good results. They are first to secure as fine and uniform a dispersion of the added water as possible, second use high settling tank temperature and third careful selection of demulsifying chemical.

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FIELD OPERATIONS

Summarizing the Week's Developments

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KANSAS—Arbuckle lime production was uncovered in the Hoisington pool, Barton County, where other production is from Lansing lime. The Bloomer pool, Barton County, was extended one-fourth mile northward. The Ochs pool, Russell County, was given two one-half mile west extensions. New production was uncovered in section 1-16-14w, one-half mile south of the Trapp pool in Barton County.

TEXAS—The Cedar Point field of Galveston Bay was defined on the northeast and the Fairbanks field in Harris County defined on the south by a dry hole and extended on the north by a 725-bbl. well. A new producing sand is indicated in the recently opened Fitzsimmons pool in Duval County. The Wasson and Bennett pools in Yoakum County were extended, as were the Harper and Jordan pools in Ector. The first production in Kimble County is coming at the rate of 15 to 20 bbls. a day from a pay at 1,869 feet. Wildcats in Fisher, Callahan and Stephens counties are showing favorably and an oil pool was opened in a gas area in Carson County in the Panhandle. The east side of the K.M.A. deep sand field in Wichita County where wells have been smaller than the average in the field supplied one of the largest wells in the entire field last week. A test 3 miles south of Wichita Falls looks like a prospective pool opener and another deep Strawn pool like the Panther pool in Archer County appears to be in the offing in northwestern Archer. In the southeastern corner of the county the deep pays yield only salt water in a test. A new pool was opened in the Delaware area in Cooke County by a 360-bbl. flowing well, which had swabbed and flowed 840 bbls. previously.

LOUISIANA—The deepest oil well in the world was in the course of completion in Terrebonne Parish, southern or Coastal Louisiana. Its total depth is 13,333 feet. As yet it is producing distillate. The deep pay in Lafitte, Jefferson Parish, was extended and the Jefferson Island salt dome found productive. Nine oil wells were completed in the Lisbon field in North Louisiana. An outpost to the Cotton Valley Bodcaw sand horizon is not yet completed, but is expected to make a good production of 39-gravity oil. It was producing 40 bbls. per hour through casing.

KENTUCKY—The Birk City pool in Henderson County has nine wells producing from McClosky lime; a 4,000,000-foot gas well in Jones sand, and three McClosky wells near completion, with good saturation in each.

NEW MEXICO—The Vacuum pool in Lea County was extended 2 miles to the northeast in section 21-17-35, and an outpost in section 6-17-34 was showing oil to indicate an extension of 4 miles northwest for the Vacuum area.

CALIFORNIA—A well in the Greeley field in Kern County started at 15,090 bbls. per day with 12,000,000 feet of gas at 11,500 feet.

Completions in All Fields

(Week Ending June 18, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	41	13	5	59	1,875	1,925
Ohio	6	8	4	18	429	485
Indiana	0	0	0	0	42	42
Kentucky	11	7	8	26	370	222
Illinois	24	0	6	30	475	29
Michigan	11	0	2	13	364	394
Kansas	22	0	6	28	820	1,125
Oklahoma	18	0	10	28	827	1,345
Texas:						
North Central Texas	48	0	23	71	1,479	1,344
West Texas	41	1	4	46	1,080	1,218
Texas Panhandle	8	4	0	12	295	313
East Texas	28	0	0	28	1,035	996
East Central Texas	2	0	2	4	165	333
East Texas Border	3	0	0	3	80	194
Gulf Coast Texas	22	7	0	29	594	682
Southwest Texas	30	9	1	40	1,000	1,526
Total Texas	182	21	30	233	5,728	6,606
North Louisiana	14	2	3	19	279	308
Gulf Coast Louisiana	6	1	0	7	222	215
Total Louisiana	20	3	3	26	501	523
Arkansas	3	0	1	4	120	57
Montana	2	0	1	3	39	76
Wyoming	0	0	0	0	77	44
Colorado	0	1	0	1	5	6
New Mexico	10	0	0	10	268	367
Utah	0	0	0	0	0	0
California	14	0	4	18	621	688
Total United States	364	53	80	497	12,561	13,934
Total previous week	374	31	130	535		
Difference	10	22	50	38		

Outstanding Fields--Highlights

(Week Ending June 18, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	26	90	24	18,108	496	15,150
Hastings	2	8	3	1,764	548	19,627
West Saxet	2	4	3	275	26	2,415
Saxet	1	8	1	77	601	29,687
Benavides	3	10	2	242	203	10,412
East Texas	31	104	28	1,573	25,269	363,497
Talco	1	5	1	105	639	24,150
Ector County	18	70	22	25,950	1,107	34,398
Winkler County	6	17	3	890	1,649	35,649
OKLAHOMA						
Dora	2	6	0	0	71	4,875
Oklahoma City	3	11	2	490	1,084	106,100
KANSAS						
Barton County	4	18	3	864	323	9,888
Stafford County	4	20	6	2,465	135	3,320
Rice County	3	15	2	1,130	1,171	29,055
Russell County	4	22	5	3,432	1,089	27,091
NEW MEXICO						
Lea County	12	88	10	5,500	1,757	83,760
LA-ARK-TEX						
Rodessa, Tex-La-Ark	9	14	6	2,780	997	77,265
Jennings, La.	1	14	0	0	111	21,314
Cotton Valley (deep)	3	22	4	3,560	65	11,505
Lisbon, La.	4	14	8	5,453	229	9,970
Schuler, Ark.	1	17	0	0	62	9,130
MICHIGAN						
Buckeye	5	18	1	50	409	23,738
ILLINOIS						
Central Illinois	30	184	24	6,388	609	33,782
CALIFORNIA						
Wilmington	6	30	1	5,339	496	94,450

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Summarizing the Week's Developments

OKLAHOMA—E. H. Moore and Texas Co. will seek a southeast trend from the Ramsey pool, Payne County, in an outpost in section 19-18-2e. A Jesse pool extensioner in Pontotoc County was completed in section 12-1n-7e. The far-western wildcat in Cimarron County, Oklahoma Panhandle, was dry and abandoned. A deep Stephens County wildcat in section 1-2n-8w, flowed 214 bbls. of oil in three days.

KANSAS—Arbuckle lime production was uncovered in the Hoisington pool, Barton County, where other production is from Lansing lime. The Bloomer pool, Barton County, was extended one-fourth mile northward. The Ochs pool, Russell County, was given two one-half mile west extensions. New production was uncovered in section 1-16-14w, one-half mile south of the Trapp pool in Barton County.

TEXAS—The Cedar Point field of Galveston Bay was defined on the northeast and the Fairbanks field in Harris County defined on the south by a dry hole and extended on the north by a 725-bbl. well. A new producing sand is indicated in the recently opened Fitzsimmons pool in Duval County. The Wasson and Bennett pools in Yoakum County were extended, as were the Harper and Jordan pools in Ector. The first production in Kimble County is coming at the rate of 15 to 20 bbls. a day from a pay at 1,869 feet. Wildcats in Fisher, Callahan and Stephens counties are showing favorably and an oil pool was opened in a gas area in Carson County in the Panhandle. The east side of the K.M.A. deep sand field in Wichita County where wells have been smaller than the average in the field supplied one of the largest wells in the entire field last week. A test 3 miles south of Wichita Falls looks like a prospective pool opener and another deep Strawn pool like the Panther pool in Archer County appears to be in the offing in northwestern Archer. In the southeastern corner of the county the deep pays yield only salt water in a test. A new pool was opened in the Delaware area in Cooke County by a 360-bbl. flowing well, which had swabbed and flowed 840 bbls. previously.

LOUISIANA—The deepest oil well in the world was in the course of completion in Terrebonne Parish, southern or Coastal Louisiana. Its total depth is 13,333 feet. As yet it is producing distillate. The deep pay in Lafitte, Jefferson Parish, was extended and the Jefferson Island salt dome found productive. Nine oil wells were completed in the Lisbon field in North Louisiana. An outpost to the Cotton Valley Bodcaw sand horizon is not yet completed, but is expected to make a good production of 39-gravity oil. It was producing 40 bbls. per hour through casing.

KENTUCKY—The Birk City pool in Henderson County has nine wells producing from McClosky lime; a 4,000,000-foot gas well in Jones sand, and three McClosky wells near completion, with good saturation in each.

NEW MEXICO—The Vacuum pool in Lea County was extended 2 miles to the northeast in section 21-17-35, and an outpost in section 6-17-34 was showing oil to indicate an extension of 4 miles northwest for the Vacuum area.

CALIFORNIA—A well in the Greeley field in Kern County started at 15,090 bbls. per day with 12,000,000 feet of gas at 11,500 feet.

Completions in All Fields

(Week Ending June 18, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	41	13	5	59	1,875	1,925
Ohio	6	8	4	18	429	485
Indiana	0	0	0	0	42	42
Kentucky	11	7	8	26	370	222
Illinois	24	0	6	30	475	29
Michigan	11	0	2	13	364	394
Kansas	22	0	6	28	820	1,125
Oklahoma	18	0	10	28	827	1,345
Texas:						
North Central Texas	48	0	23	71	1,479	1,344
West Texas	41	1	4	46	1,080	1,218
Texas Panhandle	8	4	0	12	295	313
East Texas	28	0	0	28	1,035	996
East Central Texas	2	0	2	4	165	333
East Texas Border	3	0	0	3	80	194
Gulf Coast Texas	22	7	0	29	594	682
Southwest Texas	30	9	1	40	1,000	1,526
Total Texas	182	21	30	233	5,728	6,606
North Louisiana	14	2	3	19	279	308
Gulf Coast Louisiana	6	1	0	7	222	215
Total Louisiana	20	3	3	26	501	523
Arkansas	3	0	1	4	120	57
Montana	2	0	1	3	39	76
Wyoming	0	0	0	0	77	44
Colorado	0	1	0	1	5	6
New Mexico	10	0	0	10	268	367
Utah	0	0	0	0	0	0
California	14	0	4	18	621	688
Total United States	364	53	80	497	12,561	13,934
Total previous week	374	31	130	535		
Difference	10	22	50	38		

Outstanding Fields--Highlights

(Week Ending June 18, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	26	90	24	18,108	496	15,150
Hastings	2	8	3	1,764	548	19,627
West Saxet	2	4	3	275	26	2,415
Saxet	1	8	1	77	601	29,687
Benavides	3	10	2	242	203	10,412
East Texas	31	104	28	1,573	25,269	363,497
Talco	1	5	1	105	639	24,150
Ector County	18	70	22	25,950	1,107	34,398
Winkler County	6	17	3	890	1,649	35,649
OKLAHOMA						
Dora	2	6	0	0	71	4,875
Oklahoma City	3	11	2	490	1,084	106,100
KANSAS						
Barton County	4	18	3	864	323	9,888
Stafford County	4	20	6	2,465	135	3,320
Rice County	3	15	2	1,130	1,171	29,055
Russell County	4	22	5	3,432	1,089	27,091
NEW MEXICO						
Lea County	12	88	10	5,500	1,757	83,760
LA-ARK-TEX						
Rodessa, Tex-La-Ark	9	14	6	2,780	997	77,265
Jennings, La.	1	14	0	0	111	21,314
Cotton Valley (deep)	3	22	4	3,560	65	11,505
Lisbon, La.	4	14	8	5,453	229	9,970
Schuler, Ark.	1	17	0	0	62	9,130
MICHIGAN						
Buckeye	5	18	1	50	409	23,738
ILLINOIS						
Central Illinois	30	184	24	6,388	609	33,782
CALIFORNIA						
Wilmington	6	30	1	5,339	496	94,450

Southwest Texas District

By
F. L. SINGLETON

Second Sand Indicated in Fitzsimmons - Duval Field

CORPUS CHRISTI, Tex., June 20.—A new sand in the recently opened Fitzsimmons field, Duval County, was indicated by H. J. Porter No. 2 Fitzsimmons, the second well drilled in the field. The pay, believed to be "Government Wells" sand, was tested on a drill-stem test at 3,604-13 feet, and in 42 minutes it showed 35 pounds of working pressure, 2,690 feet of pipe-line oil, and 225 feet of salt water. The hole was cored deeper to the Pettus sand, and the discovery horizon was cored at 4,290-4,300 feet. On a 10-minute drill-stem test the section tested 170 pounds of working pressure and 1,150 feet of oil. An electrical survey was made of the hole, and casing has been cemented for completion. The showing in the Government Wells sand apparently proves this structure as the same type as that in the Benavides field, where several sands above the Pettus sand have been developed. There are four active operations in the field.

Coastline Oil Co. is squeezing off perforations in No. 1 State, an attractive wildcat in which an attempt is being made to open the first field in the tidal waters of the lower Gulf Coast district. The well is in Red Fish Bay, 2 miles southeast of Aransas Pass. The hole is bottomed at 8,660 feet with 7-inch casing cemented at 8,637 feet. Perforations were made at 8,555-76 feet, and on a drill-stem test the well flowed clear salt water under 250 pounds of pressure. Several sands are reported to have been cored, and the company is scheduled to reperforate the casing the first of the week. Geological markers released on the well show the Miocene Discorbis topped at 6,042 feet, Oligocene Discorbis at 6,230 feet, Large Discorbis at 6,595 feet, Heterostegina at 6,839 feet, Round Marginulina at 7,054 feet, Flat Marginulina at 7,174 feet, and the Large Marginulina at 7,386 feet.

Northeast of the East White Point field, Atlantic Refining Co. is rerunning tubing, preparing to testing No. 1 D. F. Jones. After swabbing for several days without results, the screen and liner were pulled and found to have been clogged. The hole is bottomed at 6,010 feet, and the well is testing a sand section at 5,297-5,324 feet which showed possibilities on an electrical survey.

On the Jackson Trend

Along the newly opened deep play of the Jackson trend, another field has been indicated by the attempted blowout of the Magnolia Petroleum Co. No. 1 Valdez, about 10 miles southwest of Ben Bolt in Jim Wells County. The well was brought under control after showing extremely high gas pressure from a depth below 6,215 feet. The blowout occurred while the well was being drilled, and details of the cored record were not available. No. 1 Valdez is located on the same trend as the South Alice field, and the showing is believed to be in the same sand section as South Alice, in view of the fact that it is several miles down dip from the field. Another oil field along this trend will intensify an already active wildcatting campaign. East of the South Alice field; Humble Oil & Refining Co. No. 1 Tarrant is coring below 6,339 feet, with no further showings reported.

In the South Alice field two oil producers were added. W. J. Coates, in No. 2 Lindsay & Reed, 1,059 feet west of No. 1, perforated casing at 5,216-21½ feet, and the well flowed 160 bbls. on a 24-hour potential test. The flow was through a one-eighth inch choke, with casing pressure 1,000 pounds and tubing pressure 870 pounds. H. H. Howell No. 5 Lindsay & Reed, 922 feet west of No. 2, flowed 178 bbls. per day through a one-eighth inch choke from perforated casing at 5,267-88 feet. Sand was logged at 5,260-90 feet.

In the East Premont field, Jim Wells County, Magnolia Petroleum Co. and others No. 9 Seeligson is being killed to plug back after it showed gas and salt water with a trace of oil when tested from a screen settting at 6,585-6,605 feet, the total depth.

Deep Tests in Saxet

Two wells in the Saxet field were testing deep sands. In the north end of the field Lonnie Glasscock No. 1-D Glover Jones perforated casing at 6,700-10 feet and was cleaning into the pit. The hole is bottomed at 7,396 with 5½-inch casing cemented at 7,270 feet. Conroe Drilling Co. No. 9 Bliss perforated casing at 6,733-36 feet and was testing. On a drill-stem test at 6,731-39 feet it showed 2,100 feet of oil in 10 minutes.

In the Balcones Fault Line district two shallow serpentine structures were discovered. One and a half miles northwest of Anchorage, Atascosa County, M. Altgelt No. 1 Venegas, F. De La Garza Survey, Block 3, cored saturated serpentine at 2,738-40 feet and drilled and cored serpentine with an oil odor at 2,740-80 feet, the total depth. The well is shut down and casing is expected to be cemented for completion.

South of Lytton Springs, Caldwell County, Fred Shields No. 1 Walker topped the serpentine at 1,230 feet and cored saturation to 1,235 feet. Dry serpentine was cored at 1,320-35 feet, the total depth. Five and three-sixteenths inch perforated liner was run to bottom, and the well is swabbing estimated 2 bbls. of oil per hour.

In Burleson County Red Bank Oil Co. No. 1 Coffield pumped 175 bbls. of fluid during the last 16 hours, of which 16 per cent was salt water and 84 per cent oil. The company is changing pumping equipment on the well, and another gauge will be made. The salt water content has varied from 2 to 16 per cent.

In the extension area of the Barbacoas field, Starr County, Lee Davis No. 1 Garcia has been completed for an initial production of 20 bbls. per hour through a quarter-inch choke with tubing pressure 180 pounds and shut-in casing pressure 210 pounds. This is the second well drilled in the area. The hole is bottomed in oil sand at 2,659-64 feet. Five and one-half inch casing was cemented at 2,657 feet. A hearing was held in Austin the past week to determine whether this area was an extension to the Barbacoas field or a separate structure, but no decision was reached.

COMPLETED WELLS

Completed wells in proven fields of Southwest Texas with total depth and initial 24-hour gauge of producing wells.

Bee County

Normanna field: J. R. Dougherty No. 5 Hicks, 4,699 feet, abandoned.

Brooks County

Alta Mesa field: Standard Oil Co. of Texas No. 13 Mestena, perforated casing 2,498-2,507 feet, 157 bbls., pumping.

Caldwell County

Branyon field: H. W. Compton No. 2 Johnston, abandoned derrick; Martel Petroleum Co. No. 3-C Young, 2,172 feet, 60 bbls., pumping; Martel Petroleum Co. No. 8-E Young, 2,341½ feet, 85 bbls. oil, 20 per cent sulfur water, pumping; Martel Petroleum Co. No. 10-E Young, 2,349 feet, 90 bbls. oil, 20 per cent sulfur water, flowing and pumping. Buchanan field: Mayton & Goode No. 4 McConnell, 2,386 feet, abandoned. Dale field: R. Ogden No. 1 Lovel, 2,840 feet, abandoned. Dunlap field: Schreiner Trustee No. 2 Moody, 2,216 feet, abandoned. Luling field: Taylor Refining Co. No. 1-B Brown, 2,161 feet, 20 bbls. oil, 30 per cent sulfur water. Salt Flat field: Plagenos & Redding No. 1 Davis, 2,460 feet, 96 bbls. oil and 50 per cent sulfur water.

Duval County

Benavides field: Gravis & Doran No. 12 Puig, 4,784 feet, 111 bbls., 22 hours, one-eighth inch choke; Navarro Oil Co. No. 4-A Rossi, perforated casing 5,318-30 feet, 131 bbls., three-sixteenths inch choke. Colmena field: Kirby and others No. 1 Duval County Ranch Co., 1,462 feet, plugged back 1,445 feet, small gas well. Casa Blanca field: Magnolia Petroleum Co. No. 1 Duval County Ranch Co., 1,190 feet, 37 bbls., 12 hours pumping. Eagle Hill field: V. G. Schimmel No. 1 Foster, sand 1,515-39 feet, 40 bbls., pumping. Hoffman field: Cox, Hamon & Gorman No. 5 Hoffman, perforated casing 2,703-10 feet, 20 bbls. oil, 30 per cent sulfur water. Salt Flat sand 2,746-54 feet, 40 bbls., jetting; Magnolia Petroleum Co. No. 3 Well, sand 2,800-12 feet, 100 bbls., jetting. Lundell field: Government Wells Oil Co. No. 26 Lundell, sand 1,419-1,507 feet, 6 bbls. per hour quarter-inch choke. Piedra De Lumbre field: Magnolia Petroleum Co. No. 44 Duval County Ranch Co., 2,067 feet, 75 bbls., jetting.

Guadalupe County

Nash Creek field: Weigand and others No. 1 Anderson, 2,750 feet, abandoned.

Hidalgo County

Samfordyce field: Graham and Kingwood Oil Co. No. 2 Yturri Land Co., perforated casing 3,005-09 feet, 95 bbls., five-sixteenths inch choke.

Jim Wells County

South Alice field: Conroe Drilling Co. No. 1 Lindsay & Reed, perforated casing 5,254-58 feet, 6,000,000 feet of gas and 50 bbls. distillate, three-eighths inch choke.

Karnes County

South Burnell field: Dirks Brothers No. 4 Choate, 3,822 feet, abandoned.

Medina County

Ina field: Medina Production Co. No. 4-A Schmidt, 946 feet, 10 bbls., pumping.

Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 15 Webb, 6,655 feet, 165 bbls., one-eighth inch choke. Luby field: Seaboard Oil Corp. No. 22 Luby, perforated casing 5,060-66 feet, 140 bbls., one-eighth inch choke. Richard King field: Southern Minerals Corp. No. 8 King, perforated casing 4,018-20½ feet, 100 bbls. per day, 3 per cent salt water, five thirty-seconds inch choke. Saxet field: Ben F. Smith No. 2 Walton, perforated casing 4,889-96 feet, 77 bbls., jetting. West Saxet field: Renwar Oil Corp. No. 3 Harrington, 5,825 feet, 37 bbls. oil, 8 bbls. salt water 8 hours, nine sixty-fourths inch choke; Renwar Oil Co. No. 2-B Kennedy, perforated casing 5,433-38 feet, 49 bbls. eight hours, five thirty-seconds inch choke; Renwar Oil Co. No. 5 McKenzie, perforated casing 5,800-04 feet, 79 bbls. eight hours, five thirty-seconds inch choke; Renwar Oil Corp. No. 11 McKenzie, perforated casing 5,769-72½ feet, 90 bbls. eight hours, three-sixteenths inch choke.

San Patricio County

East Plymouth field: Humble Oil & Refining Co. No. 2 Smith & Tolbert, 6,750 feet, abandoned. Plymouth field: Plymouth Oil Co. No. 99-C Welder, perforated casing 5,872-75 feet, 7 bbls. per hour, nine sixty-fourths inch choke.

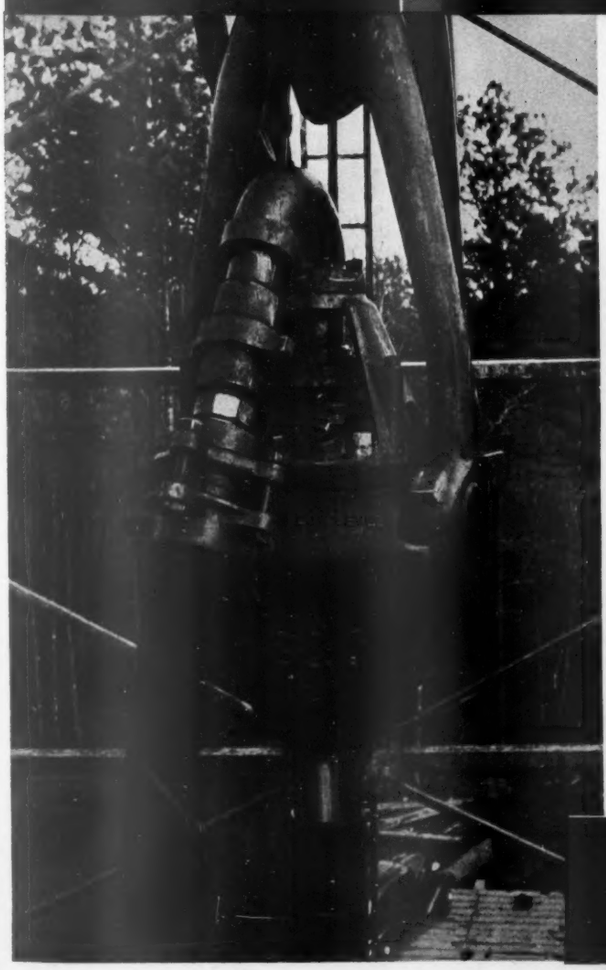
Webb County

Oilton field: O. W. Killam No. 1 Leyendecker, sand 1,995-2,005 feet, 100 bbls., pumping; J. R. B. Moore No. 1 Garcia, 2,503 feet, abandoned.

Refugio County

Refugio field: Houston Oil Co. No. 44 Rooke, 6,205

(Continued on Page 74)



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North and East Texas

By MITCHELL TUCKER

K. M. A. East Side Completes One of Field's Best Producers

WICHITA FALLS, Tex., June 20.—The Texas Railroad Commission last week set the new mid-month K.M.A. per well allowable at 36 bbls. daily on the basis of 20-acre units. This order makes a downward adjustment from 42 bbls. per day under which the pool has been operating for the first 16 days of the month. There are now 501 producing deep wells in the field with a daily field top allowable of 16,556 bbls.

The east side of the K.M.A. field, in which wells have been completed for small initial productions, due to a thinner section of pay sand, was the scene last week of one of the best wells in the field. Belcher No. 1 Love, in the Kennard Survey, was estimated at 85 bbls. per hour following a 150-quart shot in sandy lime at 3,817-79 feet. The well flowed 1,500 bbls. into tanks before it was shut in to await official gauge. Total depth is 3,981 feet in shale.

A wildcat 3 miles south of Wichita Falls, Continental Oil Co. No. 1 State Asylum, Block 1, Cherokee County School Lands, was drilling ahead toward contract depth of 5,100 feet after giving indications of opening a new pool in that part of the county. The test found sand showing oil from 4,829 feet to 4,841 feet, but a drill stem test failed to show commercial production. This is the second stray showing found in this wildcat, neither of which has been found by wells in the K.M.A. field to the west.

Archer County

Possibility of another deep Strawn sand oil pool for Archer County similar to the Panther pool or the Adams Oil & Gas Co. No. 1 T. Moer strike in the eastern part of the county, was seen when Gray & Thweatt No. 1 Ferguson, section 2, S.P. Survey, a wildcat in the northwestern part of the county, found the deep pay section at 4,043-72 feet. Seven-inch casing was cemented at 4,040 feet and the plug will be drilled this week. This test is about 3 miles southeast of closest production in the K.M.A. pool, and about 2 miles northeast of Mankins, Archer County.

Final verdict on Adams Oil & Gas Co. No. 1 T. Moer, section 21, Block 3, 1 mile east of Scotland, in the eastern part of the county, a prospective pool opener which has been near completion for several weeks, will be known this week. The test has been cleaning out after a 30-quart shot in the pay section at 3,135-48 feet, plugged back from 4,165 feet to shut off water.

Failure seems to be in line for Humble Oil & Refining Co. and Fain-McGaha Oil Corp. No. 1 Fuller, section 12, Block 1, H.&T.C. Survey, wildcat in the northeastern corner of the county. Originally drilled to a total depth of 5,137 feet several weeks ago, both the Ordovician pay section and the regular K.M.A. Strawn sections have shown some oil but netted only salt water on production tests. The hole is now bottomed at a plugged back depth of 5,106 feet and will be capped and temporarily abandoned.

Probable abandonment was seen for another Archer County wildcat. Hines & Hancock No. 1 Hammond, Block 38, H. Corzine Survey, 1½ miles southeast of Chalk Hill, was shut down for orders at 3,753 feet after logging 40 feet of water sand at 3,650-90 feet, and only traces of oil at 3,654-65 feet.

Cooke County

First official gauge on the Sinclair Prairie Oil Co. No. 1 J. M. Best, Thames Toby Survey, new pool opener in the Delaware Bend area of northern Cooke County, was 840 bbls. of 35-gravity oil in 24 hours, swabbing and flowing. A full 24-hour flow test netted only 360 bbls. of oil, so the well will probably be pumped. This wildcat which opened the first deep production in Cooke County, also is one of the deepest producing wells in North Texas. The well found saturation in sand at 4,887-4,900 feet. It was originally contracted for 7,000 feet, but was completed at 4,900 feet due to this commercial oil discovery. Another deep test will probably be started on the company's block in the near future.

NORTH TEXAS COMPLETIONS

Archer County

Chapman McFarlin No. 8 W. P. Ferguson, 3,799-3,878 feet, 664 bbls.; H. Fraser No. 1 Coleman, abandoned location; F. H. Gohlke No. 1 Z. Shimer, 1,564-75 feet, 2 bbls.; Harvey Drilling Co. No. 1 J. J. Perkins, 4,996 feet, dry; C. H. Staley No. 2 Mangold, 3,785-3,860 feet, 536 bbls.; White, Duncan & Dye No. 1 W. L. Ferguson, 3,821-3,881 feet, 640 bbls.; Cable Oil Co. No. 6 C. Webb, 590 feet, dry; Cable Oil Co. No. 13 C. Webb, 695-98 feet, 10 bbls.; M. R. Stipe No. 4 W. M. Justice, 1,070-1,084 feet, 20 bbls.

Clay County

MTM Drilling Co. No. 1 L. Wright, 890 feet, dry; F. W. Merrick No. 7 J. H. Otto, 791-97 feet, 19 bbls.; A. D. Robinson No. 12 J. H. Otto B, 1,227-57 feet, 18 bbls.; the Texas Co. No. 1 A. Johnson, 1,146-80 feet, 20 bbls.; Trumter Oil Co. No. 17 G. T. Andress, 738-54 feet, 43 bbls.

Jack County

Benoil Co. No. 3 S. M. Mantooth, 3,188-3,256 feet, 416 bbls.; R. J. Donohoe No. 1 Robert Wilson, 451 feet, dry; G. B. C. Gilmore No. 1 Peck, 577 feet, dry; Martex Oil Co. No. 2 A. B. Kuykendall A, 3,118-3,146 feet, 354 bbls.; Perrin & Gillespie No. 5 Clayton Brothers, 3,011-3,114 feet, 335 bbls.; Royal Petroleum Corp. No. 1 A. B. Kuykendall, 2,937-2,982 feet, 216 bbls.

Montague County

Sinclair Prairie and others No. 4 Rosa Hodges, 1,921 feet, dry.

Wichita County

E. J. Stump No. 1 F. C. Dodson, abandoned location; Tucker Oil Co. No. 31 E. E. Elsea C, 1,730 feet, key well; Burns & Long No. 29 First National Co., 3,603-3,850 feet, 856 bbls.; D. H. Bolin No. 1 Waggoner, 4,071 feet, dry; Burk Royalty Co. No. 3 Sue Mitchell, 3,815-3,975 feet, 760 bbls.; L. T. Burns No. 5 K. T. Goetze, 1,682 feet, dry; Clark & Cowden No. 1-A Waggoner, 1,851 feet, dry; Continental Oil Co. No 1-B Sue Mitchell, 3,831-3,879 feet, 320 bbls.; Continental Oil Co. No. 1-B Waggoner, 3,768-3,915 feet, 584 bbls.; Continental Oil Co. No. 4-B Waggoner, 3,747-3,812 feet, 552 bbls.; W. A. Delaney, Jr., No. 1 G. L. Nance, 3,640-3,839 feet, 1,200 bbls.; E-C Oil Co. No. 4 Mrs. Anna Mangold, 3,715-3,793 feet, 536 bbls.; Fain-McGaha Oil Corp. No. 7 Fain et al, 3,763-3,866 feet, 832 bbls.; Golding & Cochran No. 1 D. R. Preston, 3,820-3,878 feet, 864 bbls.; Hammon, Hanlon & Buchanan No. 7 Fassett & Tuttle, 3,895-3,949 feet, 688 bbls.; J. C. Hawkins and others No. 3 Sue Mitchell, 3,860-3,907 feet, 1,216 bbls.; W. T. Hoppes No. 3 J. A. Seay B, 3,637-3,835 feet, 840 bbls. Kadane-Griffith Oil Co. No. 8 Mrs. Anna Mangold A, 3,655-3,771 feet, 1,008 bbls.; King Oil Co. and Perkins Cullum No. 5 Mrs. Anna Mangold, abandoned location; A. P. Kouri No. 1 N. H. Martin A, 3,754-3,798 feet, 944 bbls.; Lewis Production Co. No. 5 Mrs. Anna Mangold, 3,745-3,847 feet, 600 bbls.; Manson Oil Co. No. 3 Sue Mitchell B, 3,902-3,954 feet, 800 bbls.; Maro Co., Inc., No. 2 Barton, abandoned location; Mogren & Anderson No. 6 Mertens, 1,300 feet, dry; W. B. Omohundro No. 6 W. L. Hodges, 3,745-3,890 feet, 912 bbls.; A. B. Potter No. 1 D. E. Hooks, 3,900-3,971 feet, 368 bbls.; D. W. Power No. 1 D. E. Hooks, 3,890-3,967 feet, 864 bbls.; Schwegler & Persky No. 6 E. E. Goetze, 760 feet, dry; Showers & Moncrief, Inc., No. 3 W. P. Ferguson, abandoned location; Staley Oil Co. No. 2 J. M. McFall, 3,870-3,901 feet, 464 bbls.; Tedford Brothers No. 1 B. C. Ellis, 2,200 feet, dry; W. E. Production Co. No. 3 L. C. Denny, 3,786-3,900 feet, 960 bbls.; White & Duncan No. 9 Goetze, 1,094-1,106 feet, 27 bbls.; White & Duncan No. 14 K. T. Goetze, 1,737 feet, dry; Joe Worsham No. 1, No. 2, No. 3, No. 4 D. R. Preston, abandoned locations.

Wilbarger County

King Oil Co. No. 3 W. T. Waggoner T, 2,715 feet, dry.

Young County

Black Gold Petroleum Co. No. 1 King, abandoned location; W. F. Collins and others No. 3 E. R. Smith, 576-78 feet, 6 bbls.; Cosden Petroleum Corp. No. 1 T. Price, 3,596 feet, dry; Duncan, Holt & Marchman No. 31 S. M. J. Benson A, 921 feet, key well; W. Franklin No. 1 Rubenkoenig, 4,710 feet, dry; L. V. Hull No. 5 E. J. Leslie, 998 feet, dry; T. D. Humphrey No. 2 Gus Peters, location abandoned; C. E. Knox No. 4 W. D. Worsham, 3,960-3,989 feet, 496 bbls.; C. A. Montgomery and others No. 1 C. H. Ledbetter, 626 feet, dry; Pemeta Oil Co. No. 29 E. P. Tatum, 655-75 feet, 12 bbls.; the Texas Co. No. 15 Nora Finch B, 642-77 feet, 20 bbls.

EASTERN TEXAS FIELDS

DALLAS, Tex., June 20.—The Flag Lake field of northwestern Henderson County centered the majority of interest in Eastern Texas for another week as the field's southernmost outpost received a preliminary gauge and another test cored 10 feet of saturated sand. Richards & Holloway No. 1 Tarkington, 1,440 feet southwest of the Texas Co. No. 1 Nolan extension well, tested 120 bbls. of oil in 24 hours to give it a slightly better rating than the Texas Co. well which was completed for 75 bbls. per day.

Indications were also seen for another producer when Peyton Brothers No. 1 Carter, midway between the Richards & Holloway test and the Texas Co. well, cored 10 feet of sand, the lower 2 feet of which was saturated. Casing was to be set on bottom for completion through perforations, the first time such method has been employed in the field. Operators hope in this way to eliminate the large volumes of gas which have been present in the two wells on either side.

Two new wildcats were staked last week, one for a 2-mile east outpost from the southern extension area, and the other about the same distance west of the original pool. Operations are scheduled to commence this week on both of these tests.

Houston County

The first good extension and the fourth producer in the Navarro Crossing field of northwestern Houston County was indicated when Humble Oil & Refining Co. No. 1 Daily & Taylor, three-quarters of a mile southwest of the field's discovery well, was preparing to run casing and test oil shows logged from 5,850-52 feet, after topping the Woodbine series at 5,801 feet.

The field's third producer, Sun Oil Co. No. 1 Daily, is still making considerable salt water, following recompletion through perforated casing at 5,885-87 feet. Last 24-hour gauge gave the well 127 bbls. of fluid, 25 per cent of which was water. The well is expected to be plugged back again.

Deep Tests

Without having reached its original Lower Marine objective, Tom Hunter and American Liberty Oil Co. No. 1 J. P. Carter, J. H. Fields Survey, on the Kelsey dome in Upshur County, was plugged and abandoned in the Travis Peak formation at a total depth of 9,538 feet without having discovered any favorable showings.

Another deep test which failed to find production in the Lower Marine sands and started plugging back

(Continued on Page 87)

North Louisiana, Arkansas

By GEORGE WEBER

Lisbon Leads With Nine New Wells; Drilling Is Increasing

SHREVEPORT, La., June 20.—Increased drilling activity in many sections of the tri-state area were reflected during the past week in completions of new wells. The Cotton Valley field, leading the proven areas in active development, gained two new oil wells each in the Holloway and Bodcaw sands. Lisbon led all fields during the week with nine completions, and Marion County, Texas, and Miller County, Arkansas, followed with three each.

Discoveries by the numerous wildcats and outpost wells now drilling were lacking. The most important trend is seen in the beginning of activity in some of the more recently opened fields This new drilling, coupled with the sustained work in the principal fields, will bring an increase in operations in the North Louisiana and Arkansas sector.

Cotton Valley Outpost

The principal object of interest during the past week was still the new oil well in the Bodcaw sand in Cotton Valley. Stanolind Oil & Gas Co. No. 1 Pardee Lumber Co., SW NE section 36-21-10, was shut in during the week, for lack of outlet for the crude. The well has been producing through the casing, since the tubing is plugged. This week the well flowed 118 bbls. of crude in three hours with a casing pressure of 890 pounds. Operators, having had no success at breaking the plug in the tubing, will kill the well, pull the tubing and then rerun it for final completion.

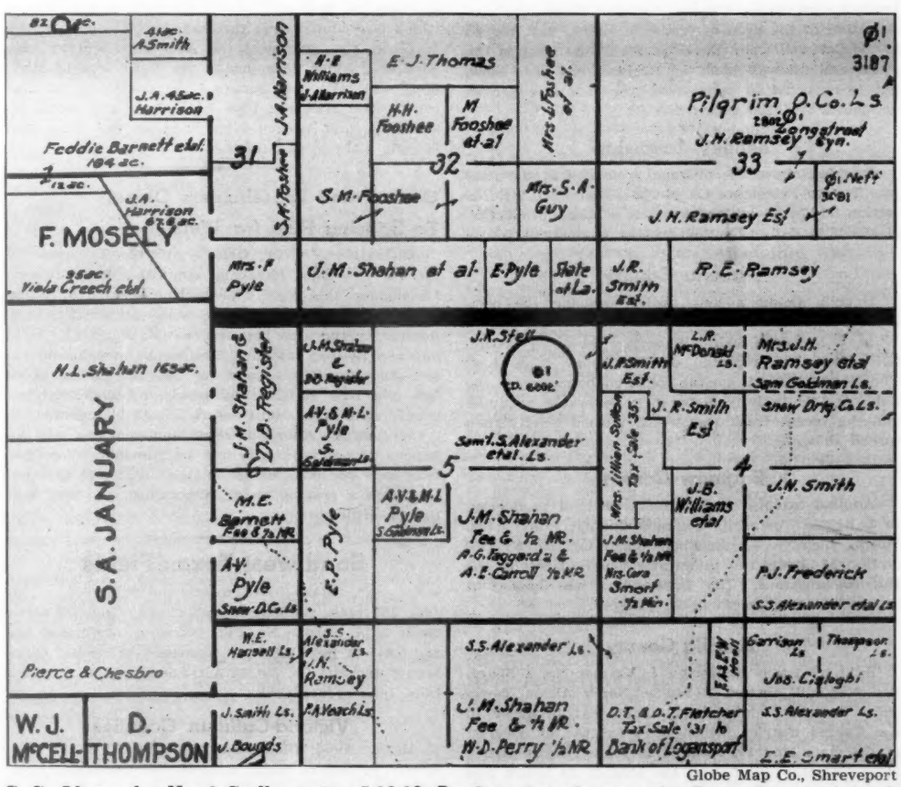
The crude averages 39.6 gravity and is a paraffin base oil. The pourpoint is extremely high, around 60 degrees. Importance of the strike is greatly enhanced in considering the possibility that oil production similar to this occurs on the flanks of the major field. The discovery has drawn the attention of the industry generally.

No offsets have been started to date. It is believed that the Standard Oil Co. of Louisiana will run a line in to the new well from the company's system, which is within a mile of the discovery. Leasing on the flanks of the field has been given considerable impetus by the discovery, and new locations in outpost positions are expected shortly.

In the field proper four good wells were completed. Hunt Oil Co. completed No. 9 Davis, sec. 14-21-10, for an initial of 64 bbls. per hour through a one-fourth inch choke with tubing pressure at 825 pounds and casing pressure at 1,725 pounds. Casing was perforated at 5,610-30 feet with 30 shots in the Holloway sand. Total depth is 5,969 feet. Another Holloway producer is the Hunt Oil Co. No. 1 Bodcaw in section 33-21-10. The well gauged 54 bbls. per hour through a one-half inch choke, with tubing pressure 350 pounds and casing pressure 750 pounds. Casing was perforated at 5,730-65 feet, and total depth is 6,013 feet.

Ohio Oil Co. brought in No. 24 Gray in section 35-21-10 for an initial production of 256 bbls. of distillate in 18 hours, together with an estimated 3,000,000 feet of gas through a three-eighths inch choke. Tubing pressure is 2,300 pounds and casing pressure 2,700 pounds. The Bodcaw sand producer is bottomed at 8,223 feet, and the sand was at 8,164-8,215 feet.

The same company completed No. 1 Sandlin in section 27-21-10 for 324 bbls. in 20 hours. In addition to the Bodcaw distillate the well made 4,000,000 feet of gas through a three-eighths inch choke. The casing pressure was 2,500 pounds and tubing pressure 2,400 pounds. Total depth is 8,153 feet.



Globe Map Co., Shreveport

S. S. Alexander No. 1 Stoll, section 5-12-16, De Soto Parish, near the Texas line and north of the Logansport gas area, is attracting considerable attention. The test encountered show of oil and salt water at 5,202 feet and tubing has been set with a packer at 5,360 feet and the well is being tested. Total depth is 5,453 feet

Production by Pool

Estimated daily gross production all companies week ending June 17, 1938:

NORTH LOUISIANA

Bellevue	640
Caddo light	4,090
Caddo heavy	2,420
Converse	660
Cotton Valley heavy	80
Cotton Valley light	*11,105
De Soto & Red River	1,400
Elm Grove	340
Haynesville	2,900
Holly	65
Homer	2,655
Lisbon	9,970
Pleasant Hill	105
Rodessa	38,625
Sarepta-Carterville	†490
Sligo	640
Sugar Creek	300
Urania	2,875
Zwolle	1,515
	80,875

SOUTH ARKANSAS

Buckner	790
Champagnolle	1,175
El Dorado	1,835
Lisbon	270
Miller County	395
Nevada	620
Rodessa	7,155
Schuler	9,130
Smackover light	2,070
Smackover heavy	16,345
Stephens	560
Troy	1,210
Urbana	1,200
Village	200
	42,955

Texas side of Rodessa field 31,485 bbls. daily.
*4,560 bbls. is distillate.
†Included in Sarepta-Carterville production is Magnolia's Sexton No. 1 240 bbls. distillate well, Section 32-23-9, Webster Parish. Producing from Lower Marine. Gravity 56.

Shongaloo Test

The Magnolia Petroleum Co. announced that a second test in the Shongaloo area will be drilled shortly. The location is for No. 1 Branton, in section 6-22-9, about 1 mile south of the No. 1 Sexton unit, which recently opened Shongaloo's first deep production at 9,000 feet. The company has also staked a location for No. 1 Pardee, in section 17-23-11, on the north edge of the Carterville field in extreme northwest Webster Parish. This will be a deep test and will be watched with considerable interest.

In Bienville Parish the Gulf Oil Corp. No. 1 Goodpine, section 25-14-8, is drilling below 10,537 feet, the deepest current drilling wildcat in the tri-state area.

Lisbon Completions

The Lisbon field gained nine wells during the week, with drilling activity at its busiest point in several weeks. Eight of the producers were brought in in the Claiborne Parish sector of the field, and the remaining one was completed in the Lincoln Parish part of the field.

E. T. Oakes and others No. 1 Kilgore, the field's only important outpost test, washed with oil during the week after testing dry at 5,313 feet, and operators are acidizing in expectation of extending production in the near future.

Blue Lake

F. W. Martin Drilling Co. No. 1 Sabine Lumber Co.,

(Continued on Page 79)

Michigan Field Report

By
O. C. PRESSPRICH

Test in Old Saginaw District for Dundee Lime Production

SAGINAW, Mich., June 20.—After a decade of inactivity, the Saginaw field, first major oil pool in Michigan, again may see a new surge of exploration—this time in the Dundee limestone instead of the Berea.

The forecast of Saginaw field drilling came in the issue of a drilling license to the Carr-Jaenicke Trust for a test on the Moses Laundra farm, SE NW SW section 10, Saginaw Township (12n-4e), with the declared intention of pushing on through the Berea sand to the Dundee—or deeper if that stratum fails to yield a commercial producer. This particular area yielded several small Berea producers during the development of the Saginaw pool, and in two deeper tests in 1927 gave shows of oil in the Dundee. One of these deeper tests continued to produce for eight years, but in small quantity. The other, deepened to the Monroe, encountered water and was abandoned.

The Edenville district of Midland County carried off the past week's honors for completed producers for the second consecutive week. All were in proved or semi-proved areas, leaving no doubt as to the potential richness of the region, but still many doubts as to the extent of the pool's boundaries. Three of the week's five wells were brought in by Sun Oil Co. on state-owned land, increasing to five the number of Edenville producers Sun has completed in two weeks.

Summary of the week's activity in all Michigan fields shows 11 oil wells added to the records—and two dry holes. Next to Edenville stood the West Branch field in Ogemaw County and the Dorr and Monterey pools in Allegan County, with two each. The Buckeye and Bentley pools in Gladwin County recorded one producer each. The Saginaw-Lakefield area and Allegan-Monterey pool accounted for the two dry holes. Edenville producers jumped the daily potential of that field by more than 1,600 bbls. daily.

Midland County—Edenville Township

Sun Oil Co. monopolized production honors of the week in the Edenville area with three completed oil wells on its state leases, all in section 27, the discovery area, which netted more than 1,100 bbls. daily after acid treatment. Sun No. 3-B State-Edenville, NW SE NE section 27-16n-1w, rated the lowest of the Edenvile producers with an estimated 200-bbl. daily run. Sun No. 4-B State-Edenville, SW SE NE section 27, south offset of the No. 3-B, was a more bountiful producer, rating 350 bbls. daily, while Sun No. 8-B State-Edenville, NE NW SE section 27, more than equaled the combined production of the 3-B and 4-B, and was rated at 600 bbls. daily. All three wells had been acidized. No. 8-B was the best producer of the week in all fields. It is one location south and one east of Sun No. 4-B. Mammoth Producing & Refining Corp. No. 1 Caplan is gauged at 300 bbls. daily after acid treatment and was completed. Turner Petroleum Co. No. 1 Verity, SW SW NW section 26, strengthened development of the area to the east of discovery with an acidized producer estimated at slightly higher than 200 bbls. Drills are continuing to penetrate toward oil-bearing strata in many parts of the Edenville field, with extension tests attracting interest but no immediate nearby completions due along possible boundaries of the field.

Dorr Township

Eureka Development Co. brought in a valuable addition to the Dorr field when its No. 3 Widenfeller, SW NW SE section 29-4n-12w, developed an after-acid production of 250 bbls. daily.

Haynes Oil & Gas Co. No. 1 Harrigan, E 7½ acres, in NW NE section 29-1n-13w, Trowbridge Township, logged a good oil show to heighten possibilities of adding the fifth producer to the Trowbridge field. Operators expected to bring the test into commercial production momentarily. Two small producers are located to the east, and another about one-half mile south.

Ogemaw County—West Branch Township

The Ogemaw-West Branch field squeezed into second place honors for the week with two producers of average potential. Weber Oil Co. No. 1 Jensen, NE SW SW section 35-22n-2e, in Michigan's most northerly producing field, was reported a 100-bbl. producer after acid, and United Drillers & Producers No. 1 Kane, SE NE NE section 19, reported a 50-bbl. daily producer after acid.

Allegan County

One favorable producer and one dry hole were developments of the week in Monterey's expanding field in Allegan County. The producer, Rex Oil & Gas Co. No. 1 Hartman, SW SW SE section 8-3n-13w, was rated at better than 400 bbls. daily after acid, but Hugh H. Heinig's No. 1 Bowser, SW NE NE section 8, was abandoned as dry.

Gladwin County

One 50-bbl. natural producer was the only addition to the Buckeye field, Gladwin County. It is a western extension in the midway field, and a south offset to T. W. Caldwell No. 2 Hostetler, western outpost. The test was Kales-Graves Co. No. 2 State Bank of Vassar, NE NE SE section 27-18n-1w. It will be acidized. Interest was attracted to the location due to the confirmation of the area as fertile territory, first tapped at the Caldwell well. Development to the west in the south and midway pools of Buckeye has been slow, but is expected to spurt with the indicated proved possibilities of the sector.

Bentley Township

Ranking above the average producers in the field was Turner Petroleum Co. No. 2-E State, NE NE NE section 29-17n-2e, which rated an acidized production of 100 bbls. daily. Bentley drilling is reported active.

Isabella County

Isabella County's lone project nearing the completion stage the past week was Pure Oil Co. No. 13 Wille, C N half N half NW section 4-14n-6w, Broomfield Township, reported drilling below 3,200 feet. The No. 13 Wille is on the southern boundary of the field, and is midway between a favorable producer and the recent freak test which gushed briefly then turned to water.

Saginaw County

Another attempt to log commercial oil production in Lakefield Township, Saginaw County, failed when Hogan, Inc., No. 1 Lake Shore Sugar Co., NE NE NE section 11-11n-1e, ran into water when 36 feet in the Dundee limestone. The Dundee top was logged at 3,157 feet. The hole will be plugged.

Tuscola County

Acid treatment at Norton & Kramer No. 1 Sharp, NW NW NW section 30-14n-8e, North Akron Township, Tuscola County, first commercial producer in the Thumb district, which attracted the oil interest of the state May 10, resulted favorably. Immediately after acid the well flowed 150 bbls. in 24 hours, and was then placed on pump for a two-hour test which netted 25 bbls. Results were considered satisfactory, and should the present production continue, offset tests are planned. The test is a Monroe stratum producer, bottomed at 3,426 feet.

Temporary halt has been called on drilling operations at Meredith & Rau No. 1 Sand Co., C NE NW section 32-11n-8e, Vassar Township, due to encountering water at a depth of 2,309 feet in the Traverse formation. Casing will be run to shut off the water before proceeding to the Dundee limestone, expected to be topped momentarily. The test is expected to prove possibility of commercial production in the southwest part of Tuscola County.

Gratiot County

Michigan Chemical Co. No. 9 fee, SE SW NW section 23-12n-3w, Pine River Township, within the city limits of St. Louis, Gratiot County, a deep test to probe for oil and an experimental brine test, was progressing late last week. The drill was below 925 feet, operators reported.

Clare County

Testing of the Traverse formation is under way at S. J. Higelmire Trust No. 1 Van Horn, NE SW NW section 3-18n-6w, Freeman Township, Clare County. The test was reported at 3,000 feet.

Gas Companies Agree

Dispute over the purchase rights of the Central Michigan Pipe Line Corp. and the American-Michigan Pipe Line Co. in the Clare and Isabella County gas fields has been settled by agreement, under the guidance of the Michigan Utilities Commission. The agreement is believed to assure adequate natural gas supplies to Mount Pleasant, Rosebush and Clare, which last winter were threatened with a gas famine.

Under the agreement the American-Michigan Pipe Line Co., which sells gas to the Gas Corp. of Michigan, will take over some of the purchase rights of the Central Michigan Pipe Line Corp. and install its gathering and transmission lines in the Clare and Isabella County gas fields.

Owners and Leaseholders Object To Spacing Plan for Wells

OKLAHOMA CITY, Okla. — Anderson-Prichard Oil Co. and associates have met opposition from owners, leaseholders and royalty owners on seeking a 10-acre well spacing order from the state corporation commission on the area between the Oklahoma City field and the Britton townsite. The company plans a Wilcox sand test. The request for the well-spacing order was the first instance in which a leaseholder has sought such regulations before a well was drilled.

William H. Atkinson, consulting geologist and independent operator, who was instrumental in getting two deep dry tests drilled in the area, said that unless such a spacing order is obtained, the well will not be drilled.

Southwest Texas Fields

(Continued from Page 68)

feet, 189 bbls., one-eighth inch choke. Tom O'Connor field: L. A. Nordan No. 15-B O'Connor, perforated casing 5,841-72 feet, 459 bbls., quarter-inch choke. Quintana Petroleum Co. No. 67-A O'Connor, 5,291 feet, 812 bbls., quarter-inch choke.

Victoria-Calhoun Counties

Heyser field: Blanco-Buchanan No. 11 C. S. Dunwoody, perforated casing 5,560-66 feet, 241 bbls., three-sixteenths inch choke; Gulf Oil Corp. No. 5-B Traylor, perforated casing 5,486-90 feet, 97 bbls., three thirty-seconds inch choke. McFaddin field: Transwestern Oil Co. No. 9-E McFaddin, sand 4,403-28 feet, 93 bbls., seven sixty-fourths inch choke.

Prospective Pools in Central Counties; Pool in Panhandle

By MITCHELL TUCKER

FORT WORTH, Tex., June 20.—Two extensions to the Wasson pool and a small extension to the Bennett pool of Yoakum County, two extensions to the Harper pool in Ector County and several prospective pool openers in scattered West Central Texas counties, were the highlights in another quiet week in the western Texas district.

Indicating a mile and one-half south and west extension to the Wasson area of southern Yoakum County, Helmerich & Payne, Inc., and Continental Oil Co. No. 1 Dowell (formerly O'Dowd), section 896, have run 2-inch tubing and are preparing to test first shows encountered in the new hole, which was sidetracked two weeks ago at 4,827 feet, below which depth two strings of tools were dropped. The test is bottomed at 5,035 feet, in lime, with oil shows logged from 4,955 to 5,020 feet.

Also in the Wasson area, and indicating a quarter-mile north extension, Ohio Oil Co. No. 1 H. H. Coffield, section 797, ran 2½-inch tubing to 5,063 feet, lowered the swab once, and the well responded with a flow of 33 bbls. of oil the first hour and 22 bbls. the second. Testing continues. Pay was found from 4,945 feet to 5,065 feet, total depth, and before tubing was run, the well flowed 113 bbls. of oil through casing in 24 hours.

The Bennett pool of southeastern Yoakum County received a 2½-mile northwest outpost last week when R. H. Gill announced plans to drill in the northeast quarter of section 611. This location is about 2 miles east of a 5,500-foot dry hole drilled by the Gulf Oil Corp. on the Dixon farm some time ago.

Possibility of a new oil pool for Terry County in the northern Permian Basin area, was dimmed when, after uncovering favorable showings above 5,107 feet, Larry E. Hultz No. 1 P. J. Ross, wildcat, in the northern part of the county, made five bailers of sulfur water in six hours after drilling to 5,127 feet. The test is now shut down, but may be deepened, as Gulf Oil Corp. No. 1 Gordon, a wildcat 5 miles east, encountered some water before picking up its best pay section.

South Basin Area

Weekly Oil Corp. and George M. Church No. 1 Cowden, one-half mile north extension to the Harper pool of Ector County, was completed and officially gauged at 530 bbls. of oil per day. Total depth is 4,274 feet. With the completion of this well, operators staked locations for Nos. 2, 3, and 4 Cowden on the same 80-acre block.

Also in Ector County, Castell, Ranger and Mixon & Richards (formerly L. G. Stogner and others) No. 1 Hendrick, wildcat, 3 miles southwest of the Addis pool and 4 miles southeast of the Harper pool, encountered its first oil showings at 3,946-50 feet. With the expectation of picking up the oil paying section within the next 100 feet, the well is now drilling in a hard lime formation below 4,011 feet.

A three-quarter mile southwest outpost to the Jordan area of Ector County, Oil Well Drilling Co. No. 1-B Connell, was cleaning out after a shot at 3,500 feet. The hole was swabbed dry, and filled 40 feet with oil in 24 hours. Total depth is 3,710 feet.

In Crane County, Humble Oil & Refining Co. and Cranfill Brothers No. 1-B Tubbs, which extended the Tubbs area 1 mile east, was officially gauged last week as a gas well with a production of 16,774,000 feet. American Liberty Oil Co. is reported to have staked location for another test about 1¼ miles southeast of this new completion.

Another large producer for the McElroy Ranch of Crane and Upton counties was completed by the Gulf Oil Corp. at its No. 174 McElroy, which made a natural flow of 1,738 bbls. in three hours, or at the rate of more than 11,000 bbls. per day. The well is on top of the pool structure and found the pay section from 2,649 feet to 2,773 feet. The well is also producing 4,300,000 feet of gas per day.

In Andrews County, Olson Drilling Co. (formerly H. S. Forgeron) No. 1 Lockhart-Brown, 5 miles west of the south end of production in the Fuhrman pool, is being deepened from 4,483 feet, after having produced only 33 bbls. of fluid in nine hours, following a 1,500-gallon acid treatment.

Pecos County

In the Imperial area of northern Pecos County, Magnolia Petroleum Co. No. 1 Tex-Mex-McKee, deep Ordovician exploratory test is drilling below 6,191 feet in brown lime with no showings reported.

Kimble County

Plateau Oil Co. No. 1 J. M. Anderson, indicating the first commercial production in Kimble County, was preparing to test on the pump a showing of oil encountered at about 1,869 feet, total depth. The wildcat swabbed an estimated 15 to 20 bbls. of oil daily after the lime was treated with 1,000 gallons of acid. It is on the Llano River, 7 miles northwest of Junction, in section 43, Abstract 107, J. Duffner Survey.

WEST CENTRAL DISTRICT

Scattered wildcats in four counties of West Central Texas showed as prospective pool openers this week.

Fisher County development claimed top attention with the apparent discovery of a second Noodle Creek lime field 3 miles southwest of Rotan, and an east extension for the Rotan field.

The wildcat discovery, Forest Development Corp. and S. & D. Daube No. 1 L. G. Bennett, cored from 3,667 to 3,699 feet, recovering saturation at 3,685-95 feet in the Noodle Creek lime. A 20-minute drill stem test showed 1,000 feet of oil and 150 feet of drilling fluid. Casing was run and cemented at 3,685 feet in preparation for completion of the well.

No. 1 Bennett, located 660 feet from the north and east lines of section 51-3, H.&T.C. Survey, is on a block of 8,000 acres assembled by Forest Development Corp. and from which 2,500 acres were farmed out to the Daube Bros. of Ardmore, Okla., for drilling the test.

An east extension to the Rotan field was given when General Crude Oil Co. No. 1 Pearl Denton Casey filled 2,300 feet with oil in drilling a foot of Noodle Creek lime to 3,555 feet, and was shut down after bailing, to cement a liner to 3,510 feet. It is in the southwest quarter of section 173-2, H.&T.C. Survey. Tide Water Associated Oil Co. and Oil States Exploration Co. of Abilene will be obliged to drill three offsets.

In extreme southeastern Callahan County, J. V. Howell No. 1 E. I. Vestal ran 7-inch casing and cemented on top of Caddo lime at 2,669 feet after coring good saturation at 2,674-98 feet, total depth.

The wildcat is 2 miles northeast of Cross Plains and about 4 miles northwest of the old Pioneer field, which produces from the Caddo. It had been contracted for a rotary test to 4,000 feet or to Ellenburger lime. Location is 1,149 feet from the east and 1,000 feet from the north lines of the Jesse Dyson Survey No. 751.

In the Oplin area of southwest Callahan County, Hal Hughes, Oscar Cooper and Harold Weeks No. 1 C. D. Straley was shut down at 4,325 feet, after standardizing at 4,200 feet, to await arrival of owners from New York and California before drilling the remaining 25 to 30 feet to the expected top of the Ellenburger pay. It is 1,800 feet southeast of the Poindexter deep discovery well, and in section 370, George W. Denton Survey.

Casing was to be cemented on the G. Willard Rich No. 1 J. W. Andrews, southwestern Stephens County wildcat 6 miles northeast of Moran, after it had indicated production from the Lake sand topped at 3,667 feet. Oil rose 1,400 feet over night, with an estimated 500,000 feet of gas, through 400 feet of open hole. It is located 330 feet from the west and 450 feet from the south lines of the northwest quarter of section 39-7, T.&P. Survey.

Four miles west of Moran in southern Shackelford County, Contractors Wolf & King were rigging standard cable tool derrick for a scheduled 4,500-foot, or Ordovician wildcat, staked as the R. H. Gordon and Frank Pethybridge No. 1 C. B. Snyder. The Albany operators hold a 3,500-acre block in an area where several old deep tests have shown small production from both the Strawn and the Ellenburger. No. 1 Snyder is 330 feet from the north and east lines of section 38, L.A.L. Survey.

In extreme northwestern Shackelford County near the Ivy pool, Forest Development Corp. ran 7-inch casing and cemented at 4,818 feet, above a section of Marble Falls lime, which showed porosity on a Schlumberger log when the test had reached a total depth of 5,056 feet. A drill stem test of the porosity, at 4,819-37 feet, showed no results. It is in section 1, A.B.&M. Survey.

Two wells were completed in the Ivy pool of northwestern Shackelford County. Owens-Snebold Oil Corp. and others No. 5 D. A. Ivy flowed 326 bbls. of oil on a 24-hour gauge after 1,000-gallon acidization from 3,199 to 3,219 feet, plugged back from 3,234 feet. Iron Mountain Oil Co. No. 3 O. E. Beck flowed 557 bbls. of oil in 24 hours through three-fourths inch choke after 1,000-gallon acidization from 3,208-22 feet.

In the Sandy Ridge area of Jones County, S. C. Herring, Abilene contractor, spudded a scheduled King sand wildcat, No. 1 B. L. Ellis, 330 feet from the north and east lines of the southeast quarter of section 8-15, T.&P. Survey.

Grisham-Hunter Corp. of Abilene spudded No. 2 E. D. Appling 300 feet east of its No. 1 Appling which last winter showed as a possible pool opener from Swastika sand at 2,640-50 feet, but was carried to 4,000 feet and abandoned. No. 2 Appling, 4 miles southwest of Stamford, is located 1,140 feet from the east and 1,208 feet from the south lines of the northwest quarter of section 32, B.B.B.&C. Survey.

PANHANDLE DISTRICT

Final gauge was taken of the new oil field discovered in northeastern Carson County last week, opened by the Northern Natural Gas Co. on the A. J. Daner lands, section 237, Block B-2, H.&G.N. Survey, about 6 miles southwest of the Pampa oil field. The test was drilled in what heretofore was considered as gas territory, for the purpose of adding to the company's developed gas reserves. First oil was topped at 3,060 feet, and increases noted in the second Granite Wash drilled from 3,110 to 3,115 feet. On 24-hour flowing test the well officially gauged 484 bbls. of oil and about 1,000,000 feet of gas. No lease or immediate drilling campaign is expected, as most of the territory nearby is held solidly by gas companies.

In southeastern Gray County, section 57, Block 25, H.&G.N. Survey, McRod Oil Co. No. 1 Mathers, about a mile south of the Morse pool, gave promise last week of opening a new producing area. Casing is set at 2,425 feet, just in the top of the Granite Wash pay and the well has tested about 4,000,000 feet of gas. Bottom is still 107 feet above sea level.

WEST TEXAS COMPLETIONS

(24-hour gauges)

Andrews County

Barnsdall No. 1 W. T. Ford, 4,320-4,455 feet, 1,110 bbls. Humble Oil & Refining Co. No. 45 J. S. Means

(Continued on Page 96)

Oklahoma Operations

By
DAL DALRYMPLE

Trend to Southeast Is Sought at Outpost in Ramsey Sector

Several interesting tests, looking for new pools or seeking extensions of old areas, featured a rather drab week in Oklahoma field activity. Of prime interest was the outpost started by E. H. Moore, Inc., and the Texas Co. at No. 1 Means, NW NE NW section 19-18-2e, in Payne County. Operators are endeavoring to establish a northwest-southeast trend to the Ramsey pool, in which the nine producers are confined to the community block of Mid-Continent Petroleum Corp. and associates. A tenth well was due to be started on the block at Mid-Continent Petroleum Corp. and others No. 4 Ramsey, SW SE NW section 18-18-2e.

Testing was continuing at Sinclair Prairie Oil Co. No. 1 Crews, SW SW NE section 27-16-1e, pool opener near Meridian in Logan County. On a recent test it flowed 210 bbls. of oil by heads in 12 hours. The crew was cleaning out, with the hole bottomed at 5,238 feet.

R. L. Kemp No. 1 Rafferty, SE SE NE section 6-18-5, previously hailed as an oil pool opener in eastern Payne County, had plugged back and was producing gas.

Coline Oil Co. No. 1 Johnson, SW SE NE section 1-2n-8w, wildcat near Marlow in Stephens County, flowed 214 bbls. of oil on gas lift and through tubing in three days from plugged-back depth of 9,086 feet. It originally was bottomed at 10,000 feet. The crew was cleaning out.

Wildcat failures of the week included the outpost in Cimarron County, western Oklahoma Panhandle. Other failures and new wildcats started the past week were as follows:

Wildcat Completions

Barnsdall Oil Co. No. 1 School Land, C NW SE section 35-5-5ecm, Cimarron County wildcat, was dry and abandoned at 5,502 feet, total depth. Two other tests are to be drilled in that area within the next year.

Wilcox Oil & Gas Co. No. 1 Royer, SE SE NE section 18-14-6, wildcat between the Sac and Fox and the Davenport pools in Lincoln County, was dry and abandoned at 3,372 feet, total depth.

Burke-Greis Oil Co. No. 1 Capps, SE cor. section 7-13-7, wildcat in the northwestern corner of Okfuskee County, found Bartlesville sand at 3,201 feet, was bottomed at 3,227 feet, shot Prue sand at 2,818-48 feet, had only a slight showing of oil and was dry and abandoned.

E. Leroy Estes and others No. 1 Drevs, NW cor. section 23-7-20w, Kiowa County wildcat location, was abandoned when lease option expired.

First reports of new wildcats included these: J. M. Henry and others No. 1 Thomas, NE cor. section 9-5-7w, south of Ninnekah in Grady County, location; Olson Oil Co. and others No. 1 Vaneck, SE SW NE section 4-12-3w, between the Oklahoma City and Britton pools in Oklahoma County, digging cellar; Fain Drilling Co. and others No. 1 Little, SW SW NE section 28-11-3w, west of the Oklahoma City pool, building rig.

Pontotoc County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Greenan, NE SE SE section 12-1n-7, was completed to extend the Jesse pool, Pontotoc County, one-half mile to the southeast. It topped the basal McLish sand at 4,560 feet, total depth 4,603 feet in sand, flowed 472 bbls. of oil in five hours through tubing choke, with 1,200,000 feet of gas. Later it flowed 665 bbls. of 40-gravity oil in six hours.

Magnolia Petroleum Co. No. 9 Norris, NE NW SE section 25-2n-6, Fitts district, had Cromwell sand at 2,551-2,608 feet, total depth 2,627 feet, was shot and flowed 134 bbls. of oil in 24 hours.

Patsy Oil Co. No. 3 Meharg & West, SE SE SW section 21-2n-6, found Cromwell sand at 3,438-66 feet, total depth, and pumped 157 bbls. of oil in 18 hours.

Superior Oil Co. No. 1 Indian Royalty, NE NE NW section 36-5-4e, Beebe area, was acidized and pumped 72 bbls. of 36-gravity oil in 24 hours from Viola lime at 2,486-2,583 feet, total depth.

New work in Pontotoc County: Simpson-Roodhouse No 1 Breco, SE SW SW section 21-2n-6, building derrick; Magnolia Petroleum Co. No. 10 Norris, SE SW NE section 25-2n-6, building derrick; Superior Oil Co. No. 1 Northam, NW NW NE section 36-5-4, cellar and pits; W. B. Osborn No. 1 Busby, NW NW SW section 33-5-8, location.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending June 18, and for the preceding week was as follows:

	Barrels	
	June 18	June 11
Allen	6,750	6,725
Billings	4,750	5,250
Burbank	7,525	7,500
South Burbank	9,825	9,550
Balance Osage	18,500	18,750
Blackwell district	4,425	4,550
Bristow-Slick	7,150	1,175
Chandler	1,975	2,000
Crescent	3,950	3,775
Cromwell	3,175	3,225
Cushing-Shamrock	10,750	10,725
Duncan district	3,700	3,725
Edmond	5,250	5,450
Fish	3,150	3,625
Fitts	40,950	44,025
Jesse	2,300	3,025
Graham	4,025	4,425
Gray	925	925
Healdton	8,750	9,200
Hewitt	3,650	4,050
Keokuk	4,625	4,375
Konawa	1,275	1,300
Lucien	7,175	7,325
Moore	3,575	3,725
Oklahoma City	106,100	113,850
Olympic	5,625	5,750
Ramsey	1,000	750
Sasakwa	1,475	1,500
Sholem-Alechem	2,625	2,850
Seminole district:		
Bowlegs	8,100	8,575
Carr City	3,475	3,725
Dora	4,875	5,025
Earlsboro	4,675	4,650
South Earlsboro	500	475
East Earlsboro	4,750	4,875
Little River	6,925	7,400
East Little River	850	875
Maud	650	625
Mission	1,450	1,500
Seminole	7,325	7,550
East Seminole	1,650	1,625
Searight	2,625	3,125
Total Seminole	47,850	50,025
St. Louis-Pearson	19,925	19,350
Tatums	3,500	4,050
Tonkawa-Garber-Thomas	4,200	4,225
Wewoka	2,300	2,325
Yale-Jennings	3,625	3,800
Other pools	79,700	81,900
Total Oklahoma	446,050	464,775

Seminole County

W. B. Pine No. 2 Amoson, SW SE SW section 15-6-6, Traugh pool, Seminole County, found Simpson dolomite at 3,530 feet, total depth 3,584 feet, swabbed 180 bbls. of oil in 24 hours. It later swabbed 100 bbls. of oil and 30 bbls. of water daily. Gravity of the oil was 40 degrees.

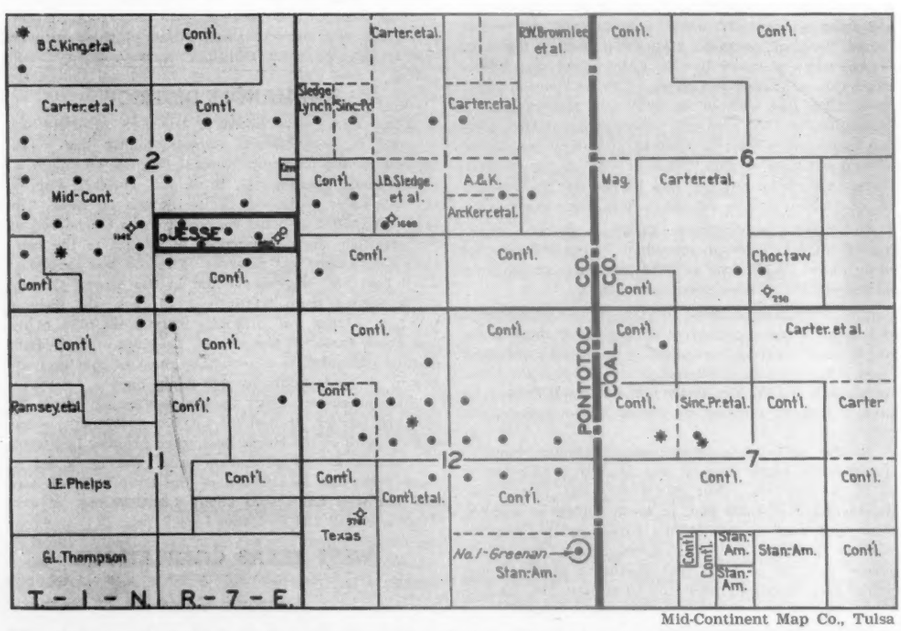
Same operator's No. 1-A Wright, SE SE NE section 16-6-6, was shot and pumped 45 bbls. of oil daily, with no water. It had Viola lime at 3,500-76 feet, total depth 3,672 feet, plugged back to 3,576 feet.

Malarnee & Shelton No. 1 Jordan, NW NE SW section 29-7-6, Dora pool, topped Viola lime at 4,455 feet, had Wilcox sand at 4,612-13 feet, and was dry and abandoned.

Wood Oil Co. No. 1 Foster, SW NW NW section 1-8-6, had first Wilcox sand at 4,124 feet, second sand 4,202 feet, total depth 4,208 feet, plugged back to 4,148 feet, perforated casing without result and was dry and abandoned.

A. Michaelson and others No. 1-A Shiflet, SE NW NE section 34-8-8, Wewoka pool, had a hole full of water at 1,275 feet, total depth, and was abandoned.

First reports of new work in Seminole County: W. B.



Mid-Continent Map Co., Tulsa

The Jesse pool, Pontotoc County, was extended southeastward at Stanolind-Amerada No. 1 Greenan, in section 12-1n-7e

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Pine No. 13 Cheparney, NW SE SW section 12-5-7, rig; Grisso Royalty Co. No. 1-A Sanders, SE NW SW section 27-6-5, location; Sinclair Prairie Oil Co. No. 3 Tennison, NE SE NW section 22-6-6, location; Rogers & Rogers No. 1 Stockton, C S half S half SW section 25-7-5, building rig; J. F. Smith and others No. 1 Hall, SW SW NE section 30-7-6, location; Wood Oil Co. No. 2 Maxey, SW SW NW section 1-8-6, location; same operator's No. 3 Maxey, NW NW SW section 1-8-6, building rig.

Pottawatomie County

Four producers were completed in the St. Louis field, Pottawatomie County. J. E. Trigg No. 1 Vanselaus, NE NE SE section 32-7-5, found dolomite at 4,010 feet, total depth 4,054½ feet, was acidized with 11,000 gallons and pumped 325 bbls. of oil and 325 bbls. of water daily.

Denver Producing & Refining Co. No. 1 Villines, NW SW SW section 36-7-4, topped dolomite at 4,138 feet, had pay at 4,145 feet, total depth 4,182 feet, was acidized and pumped 720 bbls. of oil and 700 bbls. of water in 24 hours. Oil decreased and water increased on later tests.

Magnolia Petroleum Co., No. 9 Bants, SE cor. section 14-7-4, topped Calvin sand at 3,117 feet, total depth 3,127 feet, and flowed 100 bbls. of 42-gravity oil in 24 hours.

Gulf Oil Corp. No. 1 Page, NE NW NW section 13-7-4, found Calvin sand at 2,150 feet, total depth 3,161 feet, was shot and pumped 22 bbls. of oil in 24 hours.

Magnolia Petroleum Co. No. 3 Billington, NE NW SW section 36-7-4, was building rig. Alma Oil Co. No. 1-A Bourbonais, SW SW NE section 28-7-5, was a location. Same company's No. 2 Curley, SE SW NW section 33-7-5, was a location.

Lincoln County

Wilcox Oil & Gas Co. No. 5 DeLozier, SW SE SW section 10-14-6, Sac and Fox pool, Lincoln County, topped Prue sand at 2,921 feet, was bottomed at 3,012 feet and flowed 79 bbls. of oil in 24 hours.

Mudge Oil Co. No. 3 Robertson, NE NE SW section 10-14-6, flowed 35 bbls. of oil daily from Prue sand found at 2,974 feet, total depth 3,062 feet.

Sinclair Prairie Oil Co. No. 4 Buckles, SW NW SE section 15-14-6, had Prue sand at 2,906 feet, total depth 3,006 feet, was shot and pumped 40 bbls. of oil in 24 hours.

Same company's No. 1 Rigney, SW cor. section 3-13-6, Laffoon area, topped Wilcox sand at 4,231 feet, total depth 4,253 feet, was shot and swabbed 35 bbls. of oil in 24 hours.

Wilcox Oil & Gas Co. No. 15 Sac and Fox, NE SE NW section 15-14-6, was a location.

Hughes County

Rogers & Rogers No. 1 Barnhardt, NW cor. section 8-6-8, Sasakwa area, Hughes County, found second Gilcrease sand at 2,877-99 feet, total depth, was shot and flowed 120 bbls. of 35-gravity oil in 24 hours.

Winona and others No. 1 Dale, SE SE SW section 17-7-8, was a rig.

Oklahoma County

Stahl Petroleum Co. No. 2 Miller, SW NW SW section 15-12-3w, Oklahoma City field, Oklahoma City, topped Simpson zone at 6,415 feet, total depth 6,517 feet, and flowed 438 bbls. of oil in 24 hours.

Oils, Inc., No. 1-A Huddleston, NW SW NE section 19-11-2w, had Carmichael formation at 4,123 feet, was bottomed at 4,640 feet, and pumped 52 bbls. of oil in 24 hours, cutting 6 per cent water.

Creek County

S. W. Anthony No. 7 Muskogee, SE NE NW NE section 9-16-12, an old Creek County well, was deepened from 1,745 feet to 1,899 feet and produced 3,000,000 feet of gas daily.

Sinclair Prairie Oil Co. No. 13 Unton, CEL NE NE section 4-16-12, an old Creek County well, was deepened from 2,272 feet to 2,315 feet, and was dry and abandoned.

Shaw, Doak & Hughes No. 2-A Ingalls, NE SW SE section 24-17-7, an old Creek County well, flowed 4 bbls. of oil daily after deepening from 2,517 feet to

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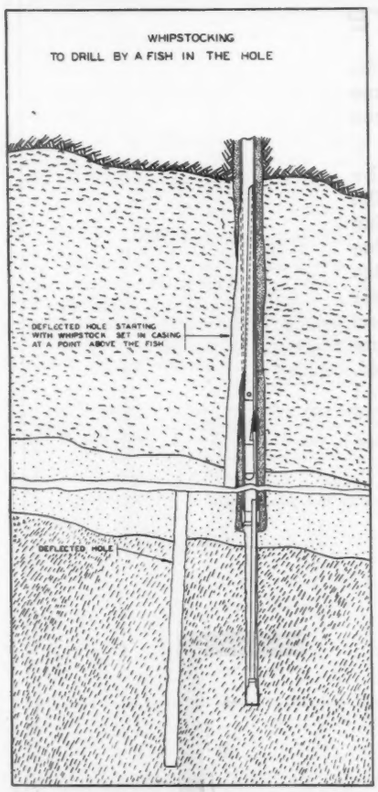
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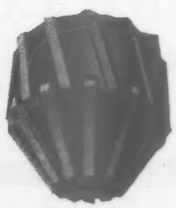

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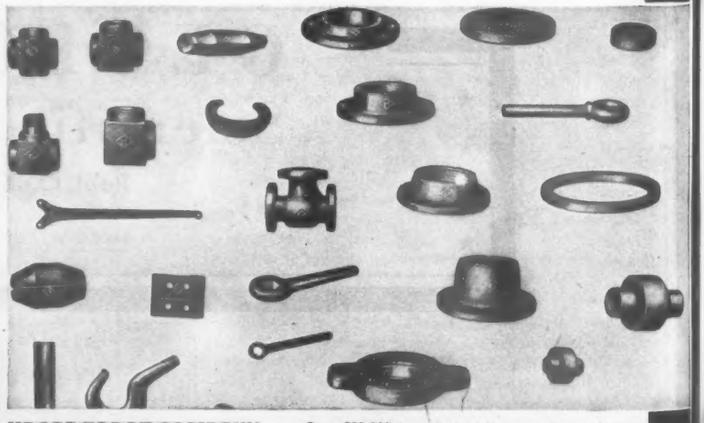

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Bartlesville sand at 2,791 feet, new total depth 2,898 feet.

New work in Creek County: S. W. Anthony No. 3 Warlecy, NE SW SE section 4-16-12, machine; Kemp & Gibson No. 1 Sellers, SW NW SW section 30-17-7, rigging up machine; Burke-Greis Oil Co. No. 1-A Hughes, SE NW SE section 20-18-10, building rig; Sooner Oil & Gas Co. No. 2 Simons, SW SE SE section 26-18-11, drilling at 1,510 feet; C. E. Nute No. 1 Emmons, NW SE NW section 18-19-8, drilling below 100 feet.

Okmulgee County

Kishoma Oil Co. No. 8 Scott, SW SW NE section 23-13-14, Okmulgee County, was dry and abandoned at 1,823 feet, total depth.

Texas Co. No. 8 Bruner, SW SE SE section 16-15-14, an old well, was dry and abandoned after deepening to 2,653 feet, total depth.

H. C. Dietrich No. 3 Anglers Club, C N half NE SE section 1-14-12, had spudded. Ed Smith No. 3 Keaton, SE NE NE section 1-14-12, an old well, was preparing to deepen.

Osage County

Sinclair Prairie Oil Co. No. 2 Osage, NW NW SW section 22-25-6, Osage County, found Bartlesville sand at 2,688 feet, total depth 2,732 feet, was shot and swabbed 50 bbls. of oil daily.

M. L. Brenner No. 3 Osage, NE SE NW section 1-22-9, had a hole full of water and was dry and abandoned at 250 feet, total depth.

Rock & Latham No. 3-A Osage, NW SE NW section 2-28-10, was dry and abandoned at 1,036 feet, total depth.

Lewis Production Co. No. 3 Osage, SE SW SW section 9-24-7, an old well, was deepened from 2,665 feet to 2,682 feet, and pumped 28 bbls. of oil in 24 hours.

Rock & Latham No. 4 Osage, NW SW NW section 2-28-10, was a location.

Pawnee County

J. V. Dunbar No. 2 Taylor, SW NE NE section 20-20-9, Pawnee County, was dry and abandoned at 2,994 feet, total depth.

Stephens County

Magnolia Petroleum Co. No. 9 Funk, SW NW SE NW section 30-1n-8w, an old Stephens County well, was deepened from 2,012 feet to 2,452 feet in shale, and was dry and abandoned.

Additional First Reports

In Logan County, Continental Oil Co. No. 2 Lovell, NW SW NE section 16-18-4w, an old well, plugged back from 4,190 feet to 4,125 feet, shot and was estimated good for 15,000,000 feet of gas.

In Tulsa County, A. Pepis No. 2-A Harrison, SW NE SE section 15-18-12, had spudded with machine.

In Wagoner County, B. G. Goble No. 1 McKay, NE NW SW section 15-16-15, was drilling below 600 feet.

In Okfuskee County, Mid-Continent Petroleum Corp. No. 3 Irelan, SE NW SW section 10-13-10, was moving in rotary.

In Coal County, Griggs Brothers No. 1 Spencer, SE SW SE section 23-1n-8, set surface casing.

In Caddo County, Palmer Oil Corp. No. 1 well, SE NE NE section 34-6-10w, Cement pool, was a location.

In Tillman County, Indian Territory Illuminating Oil Co. No. 3 Graham, NW SW NE section 1-3s-19w, Frederick pool, had dug pits.

In Jefferson County, Long, Yingling & Lauck No. 30 Seavy, SW SW NE section 30-7s-5w, was estimated good for 100 bbls. of oil after a shot, total depth 1,277 feet, and was rigging up to pump; same operator's No. 31 Seay, SW SW NE section 3-7s-5w, was testing at 1,109 feet, total depth; same operator's No. 32 Seay, SW NW NE section 3-7s-5w, was drilling below 50 feet.

New Rodessa Map Completed

Walter E. Wylie of Shreveport, La., has completed an up-to-date map of the Rodessa field. It includes the entire tri-state field, from the Red River on the northeast, thence southwest, covering Miller County, Arkansas; Caddo Parish, Louisiana; Cass and Marion counties, Texas.

Shown on the map are the fee ownerships and acreage, lease ownerships and acreage and all oil and gas wells and dry holes. Well data includes elevation and total depth, and in exploratory tests the wells are marked by large circles and the formation to which each such test was carried is indicated.

The map measures 54 inches in width and 21 feet in length, covering an area 9 miles in width and 42 miles long. The scale is 1 inch to 1,000 feet. The map is plotted in a polyconic projection from aerial surveys.

For the Texas sector a coordinate index to surveys is furnished. Highways, roads, trails, railroads and streams are shown.

La.-Ark. Fields

(Continued from Page 73)

offsetting the newly opened deep production in the Blue Lake field of Sabine Parish, southwest of Zwolle, is bottomed at 4,500 feet, and operators are plugging back after running a Schlumberger test. The well is being drilled tight, and details on the findings are not available.

In the Converse section of Sabine Parish, McClanahan No. 1 Frost Lumber Co., section 22-9-13, attempted to blow out at 3,027 feet, and operators are arranging to core at 3,032 feet.

South Arkansas

South Arkansas is due for considerable development in the next few weeks as activity begins in the Village and Magnolia fields of southeastern Columbia County. The Standard Oil Co. is drilling No. 1 Crumpler, an offset to No. 1 Phillips, discovery of the Village field, and G. H. Vaughn is moving material in for No. 1 Garrett, C NE SE section 14-17-20. The latter test has been farmed out by Shell Petroleum Corp., and the location is southeast of the Kerr-Lynn discovery well of the Magnolia field.

In eastern border of Texas an important outpost well is getting under way as the Arkansas Louisiana Gas Co. rigs up on No. 1 Johnson in the Alexander Johnson Survey, approximately 1 mile south of the same company's No. 1 Pitts, which recently opened gas production in the Hill zone. The test is south of the Jefferson section of the Marion County Rodessa area and is located in what is believed to be a heavily faulted sector.

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Texas and Louisiana Gulf

Deepest Producing Well in the World Is in Louisiana

By
NEIL WILLIAMS

HOUSTON, Tex., June 20.—The Coastal Louisiana sector of the Gulf Coast district regained its title as the world's deepest producing area following the completion of Fohs Oil Co. No. 1 Buckley Bourg, a wildcat approximately 15 miles southwest of the Lirette field in Terrebonne Parish. The well is still cleaning, showing wash water and oil-colored distillate through a one-eighth inch choke. It has a tubing pressure of 4,000 pounds and casing pressure 1,000 pounds. The hole is bottomed at 13,333 feet, next to the greatest depth to which drilling has penetrated. The well is producing through perforated casing at 13,254-66 feet establishing a new world's deepest producer, which distinction was formerly held by Continental Oil Co. No. 2-A KCL near Wasco in the San Joaquin Valley, California, completed in a sand at 13,085-170 feet. The Continental well was drilled to 15,004 feet and plugged back.

No. 1 Buckley Bourg is one of two deep wildcats which were started simultaneously in the same parish. The other well, No. 1 Bayou Baptiste, about 3½ miles southeast of the Lirette field is drilling in shale below 12,617 feet, after cementing a protection string of 7-inch casing at 12,215 feet. Several sands are reported to have been logged in this well below 11,000 feet which will be tested provided a deeper sand is not found.

Deep Lafitte Extended

Two extensions were recorded for the deep Lafitte field, Jefferson Parish, by Texas Co. No. 1-B Madison Realty Co., section 19-17s-24e, is flowing 175 bbls. per day through a three-eighths inch choke from perforated casing at 10,000-52 feet, while in section 29, No. 9 Rigolet flowed 862 bbls. through a three-eighths inch choke from perforated casing at 10,098-10,122 feet.

In the Lirette field, Terrebonne Parish, Union Producing Co. has abandoned No. 1 Fundenburk in section 50-19s-19e, at a total depth of 11,933 feet.

Two wells in the Cheneyville field, Rapides Parish, were being watched with much interest. Amerada Petroleum Corp. No. 5 Weil Land Co., section 53-1s-2e, is bottomed in the Sparta sand at 5,990 feet. Sand cored at 5,898-5,908 feet showed good porosity and saturation. Texas Co. No. 3 Weil, section 53, is drilling in shale below 7,630 feet. Sand with an oil and gas odor was cored at 7,465-68 feet. All production in the field has come from the Cockfield section from 5,600 to 5,700 feet.

One producer and two locations were reported in the Villa Platte field, Evangeline Parish. Continental Oil Co. No. 1 Ludeau, section 45-3s-2e, flowed 520 bbls. per day through a three-sixteenths inch choke from oil sand at 9,007-68 feet. Locations were made by the company for No. 1 Opelousas St. Landry, in section 44, and No. 1 Tate & McDaniel in the same section.

Jefferson Island Dome Productive

The Jefferson Island salt dome, one of the oldest known in the Gulf Coast, was added to the list of producing fields with the completion of Texas Co. No. 1 Bayless-Jones, section 58, which is flowing at the rate of 600 bbls. per day through a 10/64-inch choke with 1,560 pounds of tubing pressure. The hole was drilled to a total depth of 9,031 feet, after topping the salt at 8,683 feet. Nine and five-eighths inch casing was cemented at 8,242 feet and the completion was made through perforated casing at 8,017 feet.

Jefferson Island is one of the "Five Island" group of salt domes, the others being Avery Island and Weeks Island in Iberia Parish, Cote Blanche and Belle Island in St. Mary Parish. These domes represent some of the oldest piercement types of structures in the Gulf Coast area and the structural features are closely related. They are located in an almost straight line extending southeasterly from Jefferson Island to Belle Island in St. Mary Parish. These domes at one time were leased by various companies, but were generally considered as non-commercial after a rather extensive development program. During the past two years the domes have been released and the completion of the above well provides an incentive for additional development which can be expected to be started in the near future.

In the Lake Long field, Lafourche Parish, Fohs Oil Co. is completing No. 4 State as a distillate well in a new sand at 10,416-19 feet. It is located in section 64, about 2,640 feet due east of the discovery well that is producing at 9,365-73 feet.

On the Texas Coast

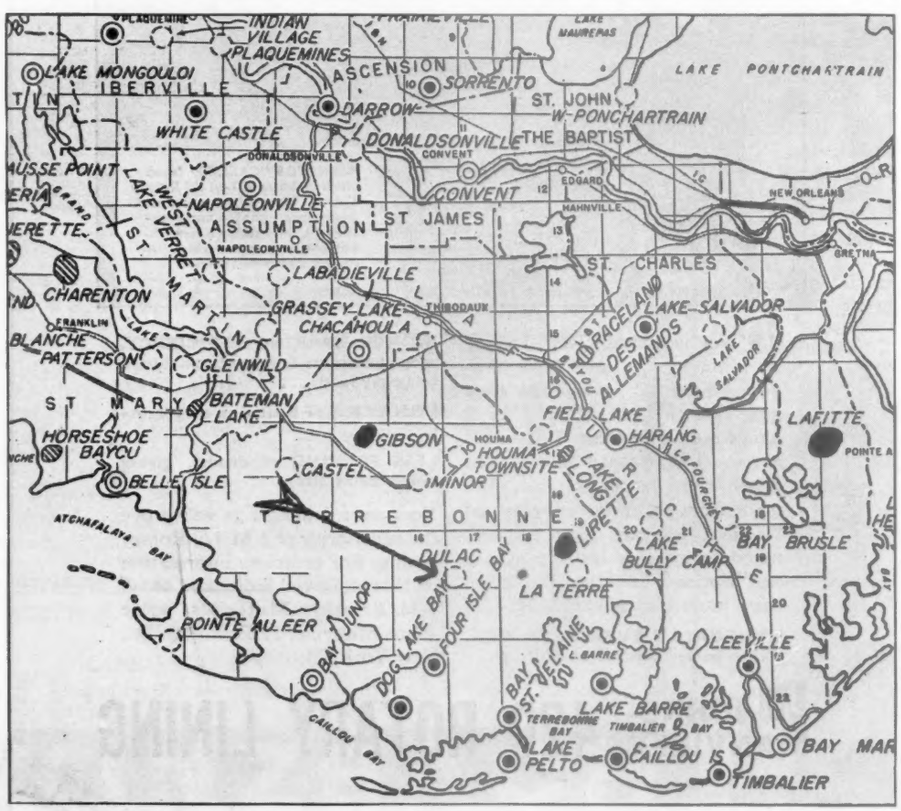
Along the Texas side of the Gulf Coast, a new producing area was added to the Dickinson structure, Galveston County, with the completion of two prolific producers. Approximately a half mile east of the Gillock area, Humble Oil & Refining Co. No. 2 Fream, J. Sellers Survey, flowed 595 bbls. per day through a quarter-inch choke through perforated casing at 8,088-94 feet. The well is three quarters of a mile due north of No. 1 Fream, a recent dry hole. Pure Oil Co. No. 1 Stewart, a half mile southeast of No. 2 Fream, and 1 mile east of production, flowed 960 bbls. per day through a quarter-inch choke from perforated casing at 8,180-8,200 feet. The completion of the two wells establishes the third producing area for the structure, as the production in the Gillock area is developed at various horizons from 8,500 to 8,900 feet which fact apparently places the two wells across a major fault.

On the northeast side of the field, approximately a mile east of production, Humble Oil & Refining Co. was testing No. 3 Peters after sand showing oil was logged at a total depth of 8,400 feet. The well is located in the J. W. Lytle Survey, about 2 miles northeast of a dry hole recently drilled on the same tract.

Three Wildcat Failures

Wildcatting was given a setback the past week as three holes were abandoned. In the Crosby area, Harris County, Merit Oil Co. quit No. 1 Guy Smith at a total depth of 7,901 feet. The Cockfield was topped at 7,441 feet, and salt water sand was cored at 7,770-75 feet. In the Midfield area, Matagorda County, J. K. Dorrance No. 1 M. Adamcik was abandoned at 8,525 feet. The Frio was topped at 6,438 feet. South of the Spurger field, Tyler County, Glenn H. McCarthy No. 1 McShane, was abandoned at 8,434 feet in the Wilcox formation, topped at 8,227 feet. While these wildcats were being abandoned, two more were getting under way. In the Ogburn area, Harris County, O. W. Killam is moving in material for No. 1 M. A. Dodd, W.C.R.R. Survey, section 12. The location is about a mile southwest of No. 1 Hamblen, a recent dry hole. West of the South Houston field,

(Continued on Page 86)



A portion of southeastern Louisiana showing location of Fohs Oil Co. No. 1 Buckley Bourg, Terrebone Parish, completed last week as the world's deepest producer

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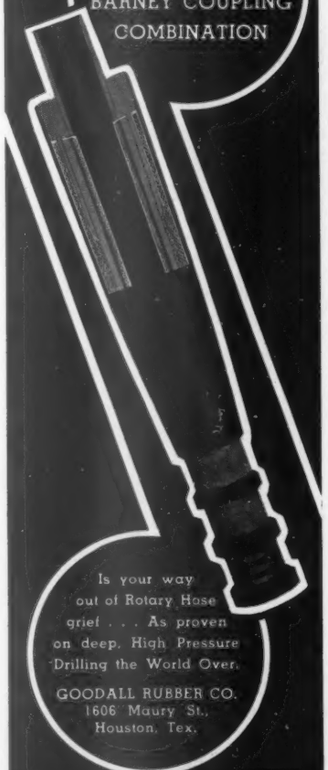

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Among Gulf Coast Drilling Contractors

Loffland Brothers hold the record of having drilled the world's deepest oil producer as Fohs Oil Co. No. 1 Buckley Bourg, a wildcat in Terrebonne Parish, Coastal Louisiana, is cleaning itself through a one-eighth inch choke, showing wash water and oil-colored distillate under a tubing pressure of 4,000 pounds and casing pressure 1,000 pounds. Drilled to a total depth of 13,333 feet, the well was completed through perforated casing at 13,254-66 feet, which surpasses the completion depth record of Continental Oil Co. No. 1 KCL in Kern County, California, 13,085-170 feet. For the same company, and located about 20 miles to the east and 3½ miles southeast of the Lirette field, No. 1 Bayou Baptiste is drilling below 12,617 feet and is expected to reach the 13,000-foot horizon. Loffland Brothers have one rotary operating in Galveston Bay and another on a wildcat in Duval County for the Standard Oil Co. of Texas.

Trinity Drillers marked up two completions for the Buffalo Oil Co. in the Mirando Valley field, and at the Midway field for the Phillips Petroleum Co. Contract was received from the latter company for a second test at Midway. The first production test to be made on Coastline Oil Corp. No. 1 State, a wildcat 2½ miles southeast of Aransas Pass in Red Fish Bay, showed salt water and a second test is being made. No. 1 State is bottomed at a total depth of 8,660 feet and 7-inch casing was cemented at 8,637 feet. The first test was made through perforated casing at 8,555-76 feet and the well flowed clear salt water under 250 pounds of pressure.

Wildcatting along the Texas Gulf Coast continues to decline as four wildcats were abandoned the past week. New locations reported for the week also showed a decline as only 28 new operations were reported of which two were wildcats. The wildcat locations were reported by O. W. Killam for his No. 1 M. A. Dodd, at the Ogburn Prospect in Harris County which will be the third test to be drilled in the area by Killam within recent weeks. West of the South Houston field, Commerce Oil Co. has made location for a projected deep test on the Meaderbrooks Development Co. lease in the J. R. Harris Survey.

The majority of the new work was started in the Dickinson, Hardin and Fairbanks fields. The opening of a new producing area on the Dickinson structure, Galveston County, is expected to result in an extensive drilling campaign, while the expiration of leases in the Hardin and Fairbanks fields is expected to keep drilling operations at a high mark for the next several weeks. A gradual slackening up of drilling in the active Hastings field which during the past two years has been the Gulf Coast's most active field, has resulted in only 10 operations being reported.

H. J. Porter Drilling Co. received contract from Magnolia Petroleum Co. for No. 1 Drushel to be drilled in the Cordele field. Jackson County. In the Fitzsimmons field, which was discovered by Porter several weeks ago, Porter's No. 2 Fitzsimmons indicated a shallower sand for the structure when it showed several hundred feet of pipe line oil in the Government Wells sand. The hole is bottomed in the discovery horizon at 4,300 feet and casing has been cemented for completion. The acreage in this field is divided into many ownerships and an extensive drilling program is anticipated.

Glen H. McCarthy has abandoned No. 1 McShane, a wildcat south of the Spurger field in Tyler County. He has one operation for Stanolind Oil & Gas Co. in the Katy area which is drilling below 10,000 feet. Two operations are reported for himself at Benavides and Amelia fields.

Jack Frazier has added another producer to his list at the Eureka field, Harris County, with the completion of No. 3 Varner which flowed 25 bbls. per hour through perforated casing at 7,725-40 feet. In the Pasadena area, Harris County, Frazier is spudding his No. 2 Houston Deepwater Land Co.

Cron & Gracey opened a new producing horizon for the Fohs Oil Co. in the Lake Long field, Lafourche Parish, Coastal Louisiana, which was completed for a distillate producer through perforated casing at 10,416-19 feet. The discovery horizon is found at approximately 9,300 feet. Cron & Gracey have two operations at the Dickinson field for themselves and four other rotaries operating at Placedo, Clam Lake and Dickinson fields for Stanolind Oil & Gas Co. and Amerada Petroleum Corp.

On the West Gueydan Prospect, Vermilion Parish, Magnolia Petroleum Co. was waiting for cement to set after cementing 410 feet of 9⅝-inch casing at 7,200 feet in No. 1 John B. Ferguson. The casing will be perforated for a test at 7,140-50 feet where a broken section of sand and shale with an oil showing was logged.

Humble Oil & Refining Co. No. 1-B Miami Corp., Little Chenier Prospect, Cameron Parish, has been abandoned at a total depth of 10,895 feet. Three miles south of the dry hole in section 30-14s-6w, Ash Robinson No. 1 Mermentau Minerals has been spudded.

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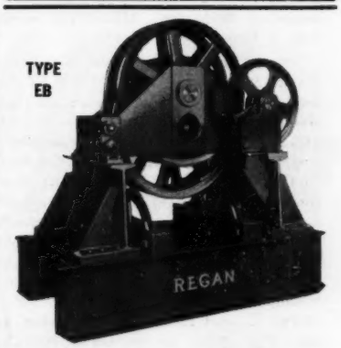

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Central West

By STAFF CORRESPONDENT

24 Wells Added in Illinois; New Kentucky Field Grows

CENTRALIA, Ill., June 20.—Sixteen completions in the Centralia pool, and seven new operations gave the first indication the development of that active Clinton-Marion County field is on the wane. It has been a lively campaign which will soon subside unless the unexpected happens and some one discovers a new trend that may cause the field to spread either inside or outside the town. There are about 250 completed wells in the entire field of which about 100 are inside the city.

In Illinois as a whole 24 oil wells were completed, but along with them were a number of holes definitely reported dry and others recorded as temporarily abandoned after failing to find production where it was expected. The initial production of all the oil wells was 6,388 bbls.

Completions

Following are the completions of the week with their sand records and initial production:

In Jefferson County, Dix pool, Carter Oil Co. No. 2 Dobbs, SW NE NW section 10-1s-2e, sand at 1,958-74 feet, shot with 15 quarts, 209 bbls.; Carter Oil Co. No. 1 Dobbs, SW SW NW section 10-1s-2e, sand at 1,961-77 feet, shot with 15 quarts, 207 bbls.

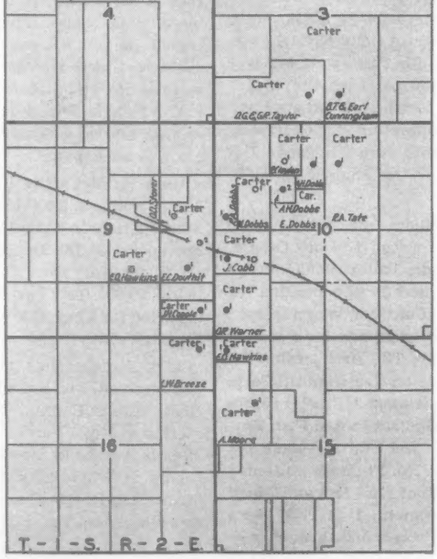
Wabash County: Adams Corner Oil Co. No. 8 Holsen & Dorney, SW cor. NE SW NW section 18-1n-11w, sand at 1,529-45 feet, shot with 60 quarts, 40 bbls.

Saline County: C. F. Bolton No. 1 Wesley, SW SW NW section 12-8s-6e, dry and abandoned at 360 feet; sands at 336-45 feet, 345-54 feet broken, and 354-60 feet.

Perry County: Amerada Petroleum Corp. No. 1 United Electric Coal Co., SE NE NE section 22-6s-2w, total depth 1,769 feet, Benoist sand at 1,530-55 feet, small showing of oil, Aux Vases 1,655 feet, Ste. Genevieve limestone 1,725 feet, Roseclaire at 1,735 feet, Fredonia at 1,749 feet, dry and abandoned.

Clinton County, Bartelso pool: Santa Fe Oil Co. No. 3 Kohrman, CWL NE SE section 5-1n-3w, Cypress sand at 983-90 feet, shot with 20 quarts, no showing of oil, abandoned. In the Centralia pool, Jack Greer and others No. 1 Abernathy, NW cor. SE NE SE section 12-1n-1w, junked and abandoned at 550 feet; Earl Thompson No. 1 Butler, SW cor. NE NE SE section 12-1n-1w, sand at 1,377-98 feet, shot with 20 and 10 quarts, 65 bbls.; Adams Oil & Gas Co. No. 1 Stead, near NE cor. SE NE SE section 13-1n-1w, sand at 1,366-78 feet, shot with 5 quarts, 85 bbls.; John Pugh Drilling Co., SW NE SE section 13-1n-1w, sand at 1,355-65 feet, shot with 10 quarts, 250 bbls.; Quinsberry No. 1 Ryan, CWL SE NE NE section 24-1n-1w, sand at 1,385-95 feet, shot with 5 quarts, 350 bbls.

Marion County, Centralia pool: J. D. Reynolds No. 1 Heeds, NW cor. SW SW section 7-1n-1e, sand at 1,369-86 feet, shot with 20 quarts, 110 bbls.; Centralia Coal Co. No. 1 fee, SW SW SW section 18-1n-1e, sand at 1,360-75 feet, no shot, 350 bbls.; Ross A. Coleman No. 1 Schroeder, CEL SW NE NW section 18-1n-1e, sand at 1,411-31 feet, no show of oil, dry and abandoned; Paul Doran No. 1 Westerfield, CEL NW SW SW section 18-1n-1e, sand at 1,351-71 feet, shot with 10 quarts, 200 bbls.; Koenig & Son No. 1 Freant, NE NW SW section 18-1n-1e, sand at 1,355-85 feet, shot with 15 quarts, 400 bbls.; John Pugh Drilling Co. No. 1 Geary, NE cor. NW SW section 18-1n-1e, sand at 1,364-88 feet, shot with 10 quarts, 300 bbls.; John Pugh Drilling Co. No. 1 Gillehausen, SW SW NW section 18-1n-1e, sand at 1,353-84 feet, shot with 23 quarts, 150 bbls.; John Pugh Drilling Co. No. 1 Marshall, NW SE SW section 18-1n-1e, sand at 1,366-78 feet, shot with 10 quarts, 240 bbls.; John Pugh Drilling Co. No. 1 Meetner, SW cor. NE NW SW section 18-1n-1e, sand at 1,354-85 feet, shot with 15 quarts, 250 bbls.; Centralia Coal Co. No. 1 fee, NE NW SW section 19-1n-1e, sand at 1,361-87 feet, no shot, 250 bbls.; F. C. Parish No. 1 David Johnson, SW SW NW section 19-1n-1e, sand at 1,403-18 feet, salt water with a showing of oil, temporarily abandoned; William P. Young No. 1 Centralia Coal Co., NW SE NW NW section 19-1n-1e, sand at 1,377-93 feet, shot with 10 quarts, 400 bbls.; Joe Potter No. 1 Rixman, CEL NW NW NW section 19-1n-1e, sand at 1,368-83 feet, shot with 10 quarts, 175 bbls.; Rockwood and others No. 1 Home Building and Loan, NE NW NW section 19-1n-1e, sand at 1,362-87 feet, shot with 30 quarts, 300 bbls.; outside



Mid-Continent Map Co., Mattoon

The Dix pool in Jefferson County, Illinois. Carter Oil Co. owns most of the acreage shown on the map, and a great many acres beyond the confines of the map. Benoist sand is the main pay in the field, which is being conservatively developed

of Centralia but in Marion County, C. A. Adams No. 1 Hawkins, C SW NE section 7-3n-1e, Benoist sand at 1,472 feet, total depth 1,514 feet, dry and abandoned.

In the Deep Basin

Clay County: Pure Oil Co. No. 1 Byars, C W half SE SE section 34-1n-7e, was dry and abandoned at 3,300 feet. It had a small showing of oil at 3,150-51 feet and topped Fredonia at 3,173 feet; Pure Oil Co. No. 2 Tetrick-A, C W half SE NW section 9-2n-8e, had sand at 2,977-80 feet and 2,990-98 feet, 330 bbls., natural flow; Eureka Oil Co. No. 1 Sichen, NW SW NE section 35-3n-8e, dry and abandoned at 3,074 feet, showing of oil in Dolomite at 2,994-3,002 feet.

Wayne County; Godlin & Huffman No. 1 Riggs, NW SW SE section 27-2n-8, had McClosky lime at 3,054-67 feet and acidized with 1,000 gallons and then with 4,000 gallons, but it developed only salt water and a small showing of oil; No. 2 Riggs, NW SE SE section 27, is at a total depth of 3,045 feet. Both wells are reported temporarily abandoned.

Richland County: Pure Oil Co. No. 5 Snyder, C E half NW SW section 3-3n-9e, had a small showing of oil at a total depth of 3,017 feet, and was reported temporarily abandoned. Pure Oil Co. No. 16 Coen, C N half NW NE section 4-3n-9e, total depth 3,005 feet, plugged back to 2,605 feet, swabbed salt water, temporarily abandoned; Pure Oil Co. No. 1 McFarlin and others, NE SE NE SW section 17-3n-9e, pay at 2,950-52 feet and 2,983-87 feet, acidized with 5,000 gallons, swabbed and flowed 166 bbls.; Pure Oil Co. No. 1 Wheeler, NE SE SW section 17-3n-9e, showing of oil at 2,955-58 feet and 2,961-65 feet, acidized with 5,000 gallons, swabbed down and did not recover the load, temporarily abandoned; Ritz Oil & Gas Co. No. 2 Jenkins, SW NW NE section 17-3n-9e, pay at 2,938-61 feet, acidized with 5,000 gallons, 140 bbls.; Pure Oil Co. No. 3 Harry Wade, C S half NE SW section 33-4-9, sand at 2,984-89 feet, acidized with 8,000 gallons, 41 bbls.; A. Muhlbach No. 1 O'Donnell, NE cor. section 26-4n-10e, pay at 3,027-35 feet, acidized with 5,000 gallons, flowed 1,380 bbls. in 24 hours through 2½-inch tubing.

First Reports of New Work

In the Centralia field, Clinton County, Lehman No. 1 Bierman, SE NE NE NE section 24-1n-1w, is a rig. In Marion County, Cole & Simmel No. 1 Kuester, NW SW SW section 5-1n-1e, was rigging up; J. O. Gill No. 1 Presbyterian Church, NE SW NW section 18-1n-1e, drilling at 735 feet; Paul Doran No. 1 Kalberkamp, NW NW NW section 19-1n-1e, drilling at 673 feet; Joe Murphy No. 1, in Lot 7 Block 3, Crossley addition, set 8¼-inch casing at 650 feet; J. P. Ostrom No. 1 Dohn, C W NW NW NW section 19-1n-1w, spudded; John C. Troutt No. 1 Semmel, CWL NE NE NW section 19-1n-1e, rig.

In Clay County, Pure Oil Co. No. 1 Schuyler Fearn, C W half NE SW section 22-1n-7e, a wildcat, drilling at 220 feet.

In Lawrence County, Ullum & Purnall No. 1 Barnett, 250 feet from N and 990 from W lines of NW quarter section 8-2n-11w, rigging up standard tools.

In Clay County, Pure Oil Co. No. 3 Tetrick A, C E half SE NW section 9-2n-8e, rigging up rotary; Pure No. 2 C. R. Bunn A, C E half NE NW section 16-2n-8e, rig.

In Richland County, Pure Oil Co. No. 1 Ashmore, C N half SE NW section 7-2n-9e, a rig; J. V. Wicklund No. 2 McCauley B, C E half W half W half section 7-2n-9e, location; Pure Oil Co. No. 1 Van Matre, C S half NW NW section 7-2n-9e, moving in rotary.

In Clinton County, Rivers and others No. 1 Hilgeman, SE cor. NE NW section 22-3n-3w, machine on ground.

In Marion County, Max Conry and others No. 1 Hight, NW cor. SW section 5-3n-2e, location. Robin H. Brian, trustee, No. 1 Nattier, 1,170 feet from S and 450 feet from E lines SE quarter section 29-4n-1e, a location.

In Lawrence County, Kesl and others No. 1 Gray, 450 feet from N and 600 from W lines of NE quarter section 13-4n-11w, rigging up standard tools.

In Fayette County, Carter Oil Co. No. 2 L. Wood, NE NW SW section 15-8n-3e, location; Carter No. 1 Jennie A. Brauer, SE NE SE section 15-8n-3e, spudded; Carter No. 1 Wood, NW NE SW section 15-8n-3e, a rig; Babcock and others No. 2 Rhodes, NW SW SE section 27-8n-3e, spudded; Carter Oil Co. No. 2 Wright, NW NE NW section 21-8n-3e, location.

In Cumberland County, National Consumers Oil Co. No. 1 Ward, NE cor. SE NE NE section 17-9n-9e, spudded.

In Shelby County, Ogg & Jolly No. 1 Jenkins, SE cor. section 26-10-4e, machine on ground.

Wildcats and Near Completions

In the Centralia field in Clinton County Shell Petroleum Corp. had seven wells ready for completion

but held up for lack of storage or pipe line facilities. The completion of the Owensboro Corp.'s new lines will relieve this situation perhaps this week. F. Heidt No. 1 Lampen, SE cor. SW SE NW section 16-1n-2w, a wildcat, was at 1,295 feet with the hole full of water. The crew was underreaming 6⅝-inch casing.

In Effingham County, Kingwood Oil Co. had rig up for No. 1 Stroble, NW SW NE section 22-7n-4e, and same company No. 1 McWhorter, C W half SE NW section 16-6n-6e, was at 5,823 feet, with the drill pipe stuck. The crew was circulating oil to loosen it. Penn-Illinois Oil & Gas Co. No. 1 Niehoff, NW NE NW section 24-8n-4e, was drilling at 1,732 feet.

In Saline County, Will Rogers and others No. 1 Saylor, SE SE SE section 3-10s-6e, had a small showing of oil and gas at 1,469 feet, in sandy lime, and was drilling at 1,502 feet.

In White County, Arab Petroleum Corp. No. 1 Frank Doerner, Sr., 430 feet from S and 330 from E lines of SE quarter section 12-7s-8e, was moving in rotary. Palmer Corp. was drilling at 867 feet in No. 1 Ziegler and White, SW NW SE section 3-5s-9e.

In Randolph County, Cain and others set 12-inch at 45 feet and were drilling No. 1 Smiley, 150 feet from S and 500 from E lines of NE quarter section 31-4s-5w.

In Wayne County, H. H. Weinert had rotary rigged up for No. 1 Twist, NE NW SW section 32-2s-7e.

In Jefferson County, Carter Oil Co. has rig up for No. 2 Dobbs, NE SW NW section 10-1s-2e.

In Wabash County, J. D. Toomey Estate No. 9 Litherland, NW cor. SE SW section 5-1n-12w, had sand at 1,548 feet and was drilling at 1,579 feet. Ridge Farm Oil & Gas Co. No. 9 Price, SE SW NW NE section 14-1n-12w, was drilling at 1,350 feet.

In Schuyler County, Fagersburg and others No. 1 Quinn, SE NE NW section 27-2n-1w, set 10-inch pipe at 20 feet.

In Lawrence County, Payne and others No. 1 Emerson and Oliphant, NW SW SE section 20-4n-11w, was drilling at 1,163 feet. J. Kesl and others were drilling at 440 feet in No. 1 Worner, C NE NE section 23-4n-11w.

In Bond County, J. S. Elmer has machine on the ground for No. 1 Delman, 20 feet from S and 820 from E lines of SW quarter section 13-6n-2w, corrected location. J. E. Huppard and others No. 1 Dresser, NW cor. SW NE NW section 21-6n-4w, was at a total depth of 1,415 feet with the hole full of water. The crew was bailing.

In Crawford County, Warren Hastings No. 1 Athey, C N half NE NE section 18-8n-13w, was drilling at 1,846 feet in hard brown limestone; Salvage Oil & Gas Co. No. 6 McGrillis, NE cor. NW NW SW section 25-8n-13w, topped Devonian lime at 2,735 feet and was shut down at 2,740 feet with a small showing of oil and gas.

In Saline County, C. F. Bolton and others No. 1 Beagle, NW cor. section 13-9s-7e, drilled to 2,601 feet and plugged back to 480 feet and shot a sand at 439-80 feet with 60 quarts. It was being put on the pump.

In Jefferson County, Nollem & Benoist No. 1 Kelly, NE NW NE section 25-4s-2e, was drilling at 2,933 feet; Dee & Foltz No. 2 Hamilton, SW cor. SW NW section 20-4s-3e, drilling at 2,515 feet; Kingwood Oil Co. and others No. 1 Webb, C W half SW NE section 4-2s-2e, Cypress sand at 2,040 feet, coring at 2,271 feet; Carter Oil Co. No. 1 Stover, SE SE NE section 9-1s-2e, Dix field, drilling in lime at 1,920 feet; Carter No. 1 Hawkins, NW NW NW section 15-1s-2e, shot with 15 quarts at 1,938-51 feet, pumped 61 bbls. in seven hours; Carter No. 1 Moore, NE SW NW section 15-1s-2e, Benoist sand at 1,925-30 feet, bailed dry, made two bailers of salt water with a small showing of oil in one hour, testing.

In Marion County, Texas Co. No. 1 Tate, NE NW NW section 5-1n-2e, Benoist sand at 1,692-1,709 feet, a saturated sand interbedded with shale, ran 7-inch casing to 1,692 feet and drilling down to McClosky lime. The Benoist is more than 300 feet deeper here than in the Centralia pool just west. R. E. Dalton No. 1 Clifton, NE cor. SE SW section 15-1n-4e, was drilling at 2,470 feet.

In Clay County, Pure Oil Co. No. 1 Schiele, C W half SE SW section 22-1n-7e, McClosky at 3,133-41 feet, acidized with 1,250 gallons, swabbed 111 bbls. net oil in 13 hours. Swabbed with 5,000 gallons, swabbed and flowed 244 bbls. of oil and 67 bbls. of water in 24 hours. Put on the pump, it made 136 bbls. of oil and water in 12 hours.

WESTERN KENTUCKY

HENDERSON, Ky., June 20.—There are nine producing oil wells in the Birk City pool, Henderson County, opened on April 22 by the Hoosier Drilling Co. in McClosky lime, the same formation which has produced so richly in Clay and Richland counties in Illinois in the past year. In the past week Snowden & McSweeney and others No. 2 Francis Dempwolf 40 acres, found McClosky pay at 1,875-76½ feet, total depth 1,886½ feet and it made an estimated 150-bbl. well after a 3,000-gallon acid treatment. W. E. Hupp and others No. 2 Mrs. Julia Gatewood, after being acidized, pumped 250 bbls. per day from McClosky lime at 1891-19,11 feet.

J. C. Ellis and others No. 1 K. A. Jones made a 4,000,000-foot gas well in Jones sand at 1,450 feet and it was decided to save the gas and not drill deeper at present. There were three wells in McClosky lime when this was written, the wells being Carter Oil Co. No. 1 Francis Dempwolf west tract, Thompson Drilling Co. and others No. 1 Mrs. Beulah Gilmore and A. E. Roscoe No. 1 Ollie Benton 1-acre lease, in which well McClosky lime was cored at 1,886-1,901 feet, the core showing the best saturation yet found in this field.

Other reports from Western Kentucky fields were as follows by county and district.

Henderson County, Birk City district: W. E. Hupp and others No. 1 O. L. Boswell east tract, moving in. Reed district: Petroleum Exploration Co. No. 1 Southern Trust Co., dry hole through McClosky lime, total depth 2,000 feet. Corydon district: Sun Oil Co. and others No. 1 R. H. Trigg Estate, drilling at 1,525 feet, water.

McLean County, South Livermore district: Roy Mace and others No. 3 J. E. Howell, show of oil in Jett, abandoned; Sunflower Oil & Gas Co. No. 1 J. E. Howell south 40 acres, spudding in; Hall & Booth No. 1 J. F. Smith, estimated 50 bbls., Jett sand, 1,145-63 feet.

Ohio County, Taffey district: Rex Pyramid Oil Co. No. 16 Scott Ambrose, Jett sand 600-32 feet, to be used as key well; No. 17, drilling at 200 feet. Friendship Church district: A. Teller and others No. 17 A. A. Whitehouse, drilling at 500 feet; Charles Marsh

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ENSIGN

and others No. 2 John Bellamy, 3 bbls., Jett sand. Adaburg district: B. & B. Oil Co. No. 3 Ben Midkiff, dry hole through Barlow sand.

Grayson County, Falls of Rough district: A. V. Smith and others No. 2 Crit Porter, rigging up; No. 1 Bud Sharver, moving in.

Hancock County, Petri district: Cumberland Petroleum Co. and others No. 1 S. V. Boutcher, dry hole, total depth 1,065 feet.

Butler County, Rochester district: Arthur R. Baxter and others No. 2 V. R. Hammers, moving in; A. C. Cornell and others No. 1 W. A. Tanner, drilling Jett sand at 859 feet, good oil showing reported; Frank Bernier and others No. 3 Kyle Willis, 50 bbls., Jett sand, 856-82 feet. Huntsville district: W. E. Hupp and others No. 1 Vernon Harrison, drilling at 100 feet; Porter Evans and others No. 1 E. C. Harper, 150,000 feet of gas and an oil showing at 150 feet, drilling deeper.

Daviess County, Birk City district: Madden Oil Co. No. 1 Onis Greer, fishing on top of McClosky; Cash Amsley and others No. 1 V. H. Lytel, rig on location. Cane Run School district: Ellis & Ashby No. 10 Myrtle Howard, drilling at 280 feet; No. 11, moving in. Grand View School district: Jack Mahle and others No. 2 Frank Williams, dry hole, total depth 820 feet. Utica district: C. E. Daugherty & Ellis No. 3 Rex O'Flynn, rigging up. Pleasant Ridge district: General Drilling Co. No. 1 Dema Ralph, 15 bbls., Barlow sand.

Breckinridge County, Falls of Rough district: A. V. Smith and others No. 3 Green Bros., dry hole, total depth 391 feet.

EASTERN KENTUCKY

ASHLAND, Ky., June 20.—Seven oil wells, one good for 50 bbls. initially, five gas wells, the largest of which was a 2,000,000-foot producer, and two dry holes comprised the record of the week in reports from the Eastern Kentucky fields.

The Virginian Oil & Gas Co. completed No. 4, V-1263 on Virginian Oil & Gas Co. land on Big Crooked in Martin County, at a total depth of 1,612 feet. The well flowed 50 bbls. of oil the first day. Fred Williams completed No. 1 on Mrs. Woods land at Betsy Lane in Floyd County, at 1,510 feet. It had a production of 2,000,000 feet of gas initially.

Other operations by counties are as follows:

In Martin County, Warfield Gas Co. is drilling at 1,737 feet in No. 4772 Jeff Newberry, on Blacklog Creek. The same company completed No. 4733, Jeff Newberry land, on Lick Branch at 2,699 feet, in Brown shale, with a flow of 476,000 feet of gas daily. Warfield was drilling at 1,107 feet in No. 4777, Clemetine Goble land, on Spence Branch.

Virginian Gas & Oil Co. completed No. 3 V-1263, W. J. Park tract, on Big Crooked Creek at a total depth of 1,451 feet in Maxon sand. It started at 20 bbls. daily.

Meade & Stevens are down 2,174 feet in brown shale in No. 1 Sam Webb, on Wolf Creek. Diederich & Ware completed No. 5 Amy Pauley, on Big Crooked at 1,343 feet. It was good for 12 bbls. of oil initially.

The Inland Gas Co. is grading locations for No. 5243 and No. 5245 and is moving to No. 5244, all on the Preece land, Coldwater Fork.

In Pike County, Inland Gas Corp. is down 2,085 feet in Little lime in No. 199 Helen Lesline, on Hammond Branch. United Carbon Co. made location for No. 473, Rebacca James and others land, on Toms Creek. Mountain Oil & Gas Co. has shut down in Big lime at 2,000 feet in No. 1 O. T. Alley, at Blackberry.

In Floyd County, Hamilton Oil Co. found no gas in Maxon sand and was drilling at 1,899 feet in No. 77-D James Hatcher, on Drooping Lick. The same firm is fishing at 1,850 feet in No. 78-D, James Hatcher land, on Ivy Creek. Fred Williams completed No. 5 Stanley heirs, in shale at the 2,790-foot level with daily production of 100,000 feet of gas. Fred Williams is rigging up No. 3 Stanley heirs, on Mare Creek. Inland Gas Corp. is moving rig at No. 201 M. S. Layne heirs, on Toms Creek.

Stephens and others are down 1,363 feet in No. 1 Awilda Darby, on Toms Creek. Spradlin and others reported a probable dry hole at 1,517 feet in No. 1 James Damron, on Toms Creek. Sturgill and others completed No. 1 Layne & Damron, at Toms Creek, at 1,508 feet. It started at 10 bbls. per day. Dorton & Pelfrey completed No. 1 Cleve Cecil, on Toms Creek, in Big lime at 1,517 feet. It is a 10-bbl. well. Sturgill & Hale No. 3 Morgan Layne, Toms Creek, was completed in Big lime at 1,519 feet with a flow of 15 bbls. of oil daily. Kentucky-West Virginia Gas Co. was drilling at 1,940 feet in black lime in No. 567 M. Slone and M. D. Slone, and is at the 600-foot mark in No. 571 Noah Jarvis. Kentucky-West Virginia Gas Co. is down 1,880 feet in Waverly shale, on Jennie Caldwell land, on Levisa Fork.

In Johnson County, Francis & Webb completed No. 3 James Wells, on Daniels Creek, with reported flow of 143,000 feet of gas daily. E. J. Evans No. 4 Thealka Coal Co. land, at Road Fork, total depth 1,811 feet, started at 100,000 feet of gas per day.

In Wolfe County, James I. Hollon is fishing at 2,830 feet in No. 1 D. H. Rose, on Red River, and is down 200 feet on the Spencer farm on Meadow Branch.

In Magoffin County, Operator Jenkins had a 6-bbl. production before the shot in No. 1 John Adams, on Short Fork. The well reached a total depth of 1,168 feet, in Weir sand. Brand Brothers are rigging up No. 1 Lon Tackett, in Twin Lick section of the Wheelersburg district. D. W. Wheeler is starting No. 1 Clifford Cochran, on Gullett Branch.

In Lee County, McConn & Wissing are drilling at 1,215 feet in No. 1 J. M. Combs, on Little Sinking, in Big Sinking district. Price Fraley is down 125 feet in No. 2 Flahaven Land Co., on Big Sinking. Brener & Adams finished a dry hole in No. 2 H. C. Johnson, at Bear Track. Virginian Gas & Oil Co. completed No. 7 V-1264, Lida Ann Moore land, on Little Sinking Creek, but no details were available.

South Penn Oil Co. was drilling at 500 feet in No. 6 John Bradenhard, on South Fork, in the South Fork district, of Powell County. Arthur E. Wireman was at 400 feet in No. 4 Stewart heirs No. 1 land, on South Fork. Wireman Brothers were drilling below 200 feet in No. 4 Albert Stewart, also on South Fork.

Joe T. Brown, treasurer, was drilling at 300 feet in No. 3 Lawery heirs, at Mount Springs.

CENTRAL OHIO

LIMA, Ohio, June 20.—A 40-bbl. producer in Medina County topped the Central Ohio producers in the past week. In Chatham Township, Preston Oil Co. No. 25

(Continued on Page 98)

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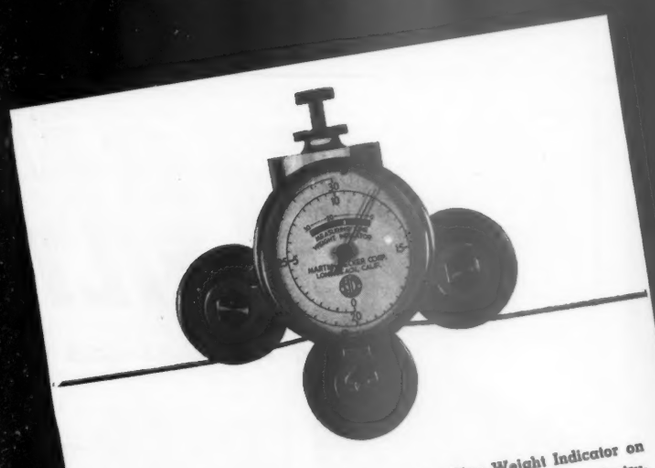

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Kansas Developments

By DAL DALRYMPLE

Deep Pay in Hoisington Pool; Extend Bloomer, Ochs Areas

New pay horizons were uncovered in Kansas the past week and several wildcats were started, but there is little indication of an intensive revival of field activity as yet, with curtailment or operations in proven areas continuing.

Perry Thayer and others No. 1 Soderstrom, SW SW NE section 21-17-13w, uncovered a new and deeper producing horizon in the Hoisington pool, Barton County. It found Arbuckle lime at 3,458-62 feet, set plug in 7-inch casing at 3,424 feet, oil rose 3,000 feet in the hole overnight when plug was drilled and the crew was reported to have swabbed at the rate of 10 bbls. of oil an hour. Gravity of the oil was 34.5 degrees. It was to be acidized. Other production in the pool is from Lansing lime.

One-fourth mile north extension of the Bloomer pool, also in Barton County, was indicated at Sinclair Prairie Oil Co. No. 1 McLean, SE NE NE section 25-17-11w. Arbuckle lime was found at 3,290 feet and spotted saturation was cored to 3,305 feet, total depth. Standard equipment was to be moved in for completion.

Shell Petroleum Corp. No. 6 Schneider B, SE SE NW section 1-16-14w, one-half mile from production in the Trapp pool of Barton County, found Arbuckle lime at 3,323 feet and recovered a saturated core from 3,329 feet, total depth. The crew was preparing to drill in and test.

The Ochs pool of Russell County was extended one-half mile westward at A. M. Austin and others No. 1 Resner, SW SE NW section 23-15-14w, a completion. It also was given a one-fourth mile westward extension at the north end of the pool by J. J. Hall at No. 1 Landon, SW SW SE section 11-15-14w, which had 1,600 feet of oil in the hole from Lansing lime at 3,100 feet, total depth.

The Finney County pool opener, Atlantic Refining Co. No. 1 Nunn, SE SE NE section 27-21-34w, pumped 22 bbls. of 28.9-gravity oil an hour on initial pumping test. Potential test was delayed pending erection of tankage. It was bottomed at 4,658 feet in Mississippi lime.

Several new wildcats and extension tests were announced. Milton & Steer No. 1 Hunt, SW SW NE section 16-34-5e, is location for a wildcat 7 miles east of Arkansas City in Cowley County. It is said to be on a surface nosing on the east flank of a Mississippi high, and will seek an offshore bar in Bartlesville sand at around 3,000 feet.

New Wildcats

J. M. Turner No. 1 Umshide, C NE SW section 32-8s-9e, is location for a wildcat in Pottawatomie County, with work due to start about July 10. It is on a 5,000-acre block, and is west of the Nemaha ridge, on surface geology by R. E. Vandruff of Little Rock, Ark.

Carl E. Schlemeyer and others No. 1 Belveal, C SE NW section 3-8-24w, was a location for a Graham County wildcat. It is about 20 miles northwest of the Morel pool, the county's only productive area.

L. E. Gardner and others No. 1 Krug, SW SE section 16-16-13w, Barton County wildcat, had started work. Location is 1 mile south of the Susank pool, 1½ miles southeast of the South Trapp pool and 2½ miles northwest of the Ainsworth pool.

Shell Petroleum Corp. No. 1 Cramm, NE section 15-19-9w, wildcat 1½ miles east of the Cramm pool in Rice County, had spudded.

Mid-Continent Petroleum Corp. had started work at No. 1 Collins, NW cor. section 24-20-26w, wildcat about 12 miles south of the Aldrich pool in Ness County.

John Nichols and others No. 1 Central Life, SE SW section 35-25-12, wildcat near the Neal gas pool in Greenwood County, is a machine.

Elmer Ash and O. V. Paul No. 1 Taylor, SE SE SW section 6-27-12, wildcat 3½ miles east of Climax in Greenwood County, had started work. Fullerton and others No. 1 Bates, NE SW SE section 32-26-11, wildcat north of Climax, is a machine.

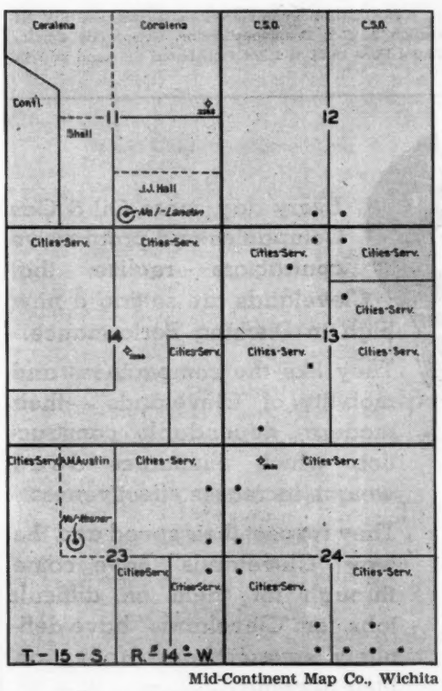
C. E. Roth No. 1 Houston, SE cor. section 10-31-4e, wildcat east of the Hittle pool in Cowley County, had started operations.

Ward McGinnis had started work at No. 1 Hill, C SW SE section 32-26-15, wildcat southeast of the Big Sandy pool in Woodson County.

Wildcat Completions

Only three Kansas wildcats were listed as completions the past week, and all were failures. El Dorado Refining Co. and others No. 1 Ruby, NW NW NE section 1-15-13w, southeast of the Letsch area in Russell County, found Arbuckle lime at 3,288 feet and was dry and abandoned at 3,296 feet, total depth.

A Stafford County duster was recorded at Carlock No. 1 Richardson, SE SE SW section 10-24-11w, northwest of the Zenith pool. It topped Misener sand, producing horizon at Zenith, at 3,804 feet, Viola lime 3,810 feet, Simpson zone 3,935 feet, Arbuckle lime 3,980-99 feet, total depth, and was dry and abandoned.



Mid-Continent Map Co., Wichita

The Ochs pool, Russell County, was given two half-mile westward extensions in sections 11 and 23-15-14w

Palmer Oil Corp. No. 1 Houser, SE NW SW section 13-30-3e, northwest of the Trees pool, Cowley County, had a hole full of water and was abandoned in Arbuckle lime at 3,254-58 feet, total depth.

Stafford County

Three producers were completed in the Zenith field, Stafford County. Stanolind Oil & Gas Co. and others No. 3 W. C. Volker, SE NE NE section 23-24-11w, south of the town of Zenith and on the east side of the field, found Misener sand at 3,812 feet, total depth 3,815 feet, flowed 569 bbls. of oil the first four hours, 574 bbls. the next four hours, flowing through 3-inch tubing, and made potential of 3,414 bbls. of oil. Gas was estimated at 1,500,000 feet.

Same company's No. 2 Bert McComb, NE NE SW section 14-24-11w, found Misener sand at 3,809 feet, was bottomed at 2,828 feet, was shot and flowed 351 bbls. of oil the first four hours, 258 bbls. the next four hours and made potential of 1,508 bbls.

The company's No. 1 Albert Fuller, SE SE SW section 11-24-11w, flowed 175 bbls. of oil the first four hours, 168 bbls. the next four hours and made potential of 1,008 bbls. Flow was through tubing. Misener sand was found at 3,768-74½ feet, where Viola lime was topped, and was bottomed at 3,776 feet.

In the Sittner area, Atlantic Refining Co. No. 2 Harris, SE SE NW section 33-21-12w, had Arbuckle lime at 3,620 feet, total depth 3,625 feet, and made potential of 553 bbls. of oil, cutting 40 per cent water.

Magnolia Petroleum Co. No. 1 Gates, NW cor. section 35-21-13w, Gates pool, topped Arbuckle lime at 3,649 feet, total depth 3,658 feet, and swabbed 210 bbls. of oil in seven hours. It was acidized, pumped 280 bbls. of oil in four hours, 298 bbls. the next four hours and made potential of 1,678 bbls. of 40-gravity oil.

Stanolind Oil & Gas Co. No. 2 Louis Harms, SW SW NE section 13-22-13w, Drach area, was acidized and made potential of 607 bbls. of oil, with a small amount of water. It had Arbuckle lime at 3,671 feet, total depth 3,701 feet, and plugged back to 3,699 feet.

Estimated Daily Production

Estimated daily production for Kansas for the week ending June 18, and for the preceding week was as follows:

	Barrels	
	June 18	June 11
Oxford City	1,250	1,275
Burrton	10,350	10,125
Ritz-Canton	4,300	4,250
Graber	2,675	2,050
Hollow-Nikkel	2,975	3,175
Lerado	1,075	950
Voshell	2,275	2,325
Wellington	550	900
Ellsworth County:		
Lorraine	2,350	2,325
Other pools	1,360	1,310
Rice-Barton counties:		
Bloomer	2,800	1,975
Chase	5,100	4,200
Geneseo	2,525	1,775
Raymond	925	750
Silica	11,025	10,300
Silica—South	1,725	1,150
Keesling	975	750
Wherry	5,075	3,325
Miscellaneous Rice	3,430	3,185
Miscellaneous Barton	5,365	6,365
Russell County:		
Fairport	1,910	1,655
Gorham	1,735	1,790
Russell	1,310	1,385
Sullivan	5,905	5,245
Trapp	8,000	8,035
Miscellaneous Russell	....	4,260
Sedgwick County:		
Valley Center	1,035	1,070
Miscellaneous	2,865	2,865
Ellis County:		
Bemis	7,025	5,600
Miscellaneous	3,000	4,015
Kingman County	635	555
Stafford County	3,965	2,960
Greenwood County	9,250	9,225
Butler County	14,760	14,220
Other fields	30,050	23,310
Total Kansas	159,550	148,650

Russell County

Coralena Oil Co. No. 2 Sellens Estate, NW SW SE section 29-15-13w, Trapp field, Russell County, found Arbuckle lime at 3,304-07 feet, total depth, pumped 384 bbls. of oil the first four hours, 366 bbls. the next four hours and made potential of 2,199 bbls.

A. M. Austin and others No. 1 Resner, SW SE NW section 23-15-14w, found Arbuckle lime at 3,361 feet, total depth 3,367 feet, swabbed 90 bbls. of oil in four

and one-half hours, was acidized and made potential of 412 bbls. of oil.

W. C. McBride, Inc. and others No. 4 Jellison, SW NE SW section 19-13-14w, Atherton area, was acidized with 10,000 gallons and pumped 480 bbls. of oil in 16 hours. On potential test, it pumped 206 bbls. of oil in the first four hours, 154 bbls. the next two hours and made potential of 865 bbls. of oil, with 240 bbls. of water. It had Kansas City pay at 2,957-59 feet.

Central Petroleum Co. No. 2 Boxberger, NW SE SE section 26-14-14w, found Kansas City lime at 2,914 feet, had best pay at 2,987-97 feet, total depth, was acidized and made potential of 2,090 bbls. of oil, with gas estimated at 1,500,000 feet.

Wolf Creek Oil Corp. No. 1 Rouback B, SE SE NW section 15-14-15w, Gorham district, found Gorham sand at 3,222-25 feet, total depth, and pumped 388 bbls. of oil the first four hours, 288 bbls. the next four hours and made potential of 1,733 bbls.

Ellis County

Champlin Refining Co. No. 3 Hadley B, SE NE SW section 29-11-17w, Hadley area, Ellis County, made potential of 1,441 bbls. of oil after acidizing Arbuckle lime topped at 3,613 feet. The hole was bottomed at 3,642 feet.

Margay Oil Co. No. 2 Bemis E, NE SW NW section 28-11-17w, Bemis field, topped Arbuckle lime at 3,469 feet, total depth 3,476 feet, was acidized, pumped 34 bbls. of oil an hour and made potential of 840 bbls.

Rice County

Continental Oil Co. and associates No. 4 Lansing A, SE SE SW section 25-18-8w, Geneseo field, Rice County, had Arbuckle lime at 3,124 feet, was bottomed at 3,207 feet, acidized, pumped 462 bbls. of oil the first four hours, 409 bbls. the next four hours and made potential of 2,455 bbls.

Frank Hollow and others No. 3 Stout, NW SE NE section 6-18-10w, Stumps area, entered Kansas City lime at 2,934 feet, found pay at 3,008 feet, was bottomed at 3,019 feet, was acidized, flowed 668 bbls. of oil the first four hours, 635 bbls. the next four hours and made potential of 3,811 bbls. Gravity of the oil was 43 degrees.

Barton County

Magnolia Petroleum Co. No. 10 Meda Steckel, NW SW NW section 1-20-11w, Silica district, Barton County, had Arbuckle lime at 3,277 feet, was bottomed at 3,289 feet, was acidized, pumped 177 bbls. of oil the first four hours, 134 bbls. the next four hours and made potential of 803 bbls. of oil.

Indian Territory Illuminating Oil Co. No. 7 Bryant, SE NE NW section 25-20-11w, South Silica field, made potential of 148 bbls. of oil from Arbuckle lime found at 3,259½ feet, total depth 3,278 feet. It swabbed 244 bbls. of oil in eight hours initially.

Stanolind Oil & Gas Co. No. 1 O. G. Soeken, C SE NW section 5-20-11w, Ellinwood pool extensioner, found Arbuckle lime at 3,323 feet, total depth 3,333 feet, was shot and acidized and made potential of 443 bbls. of oil. It is about midway between the Ellinwood pool and town of Ellinwood.

Ellsworth County

Cities Service Oil Co. and others No. 3 Schroeder A, C E half E half NW section 29-17-9w, Schroeder area, Ellsworth County, topped Arbuckle lime at 3,223 feet, total depth 3,232 feet, pumped 238 bbls. of oil the first four hours, 225 bbls. the next four hours and made potential of 1,351 bbls.

Trego County

Watchorn Oil & Gas Co. No. 1 Galloway, NE NW NW section 22-11-23w, Wakeeney district, Trego County, topped Kansas City lime at 3,512 feet, total depth 3,712 feet, plugged back to 3,639 feet, perforated casing and acidized without results, and was dry and abandoned.

Greenwood County

Weideman and others No. 1-C Lewis, SW SW NE section 25-27-8, Beaumont sector, Greenwood County, found Peru sand at 1,824 feet, based the sand at 1,837 feet, was bottomed at 2,004 feet, plugged back to 1,834 feet, was shot and pumped 12 bbls. of oil and 20 bbls. of water daily.

Sedgwick County

Prunty Production Co. No. 3 Smith A, SE NW SE section 16-25-1e, Goodrich area, Sedgwick County, had Dolomite at 3,347½-49 feet, total depth, was acidized and made potential of 473 bbls. of oil.

Woodson County

C. L. Sheedy and others No. 9 Akins, SE cor. section 19-25-14, Woodson County, found Bartlesville sand at 1,406-42 feet, total depth 1,445 feet, was shot and pumped 25 bbls. of oil in 24 hours.

Harper & Duncan No. 1-A Freeburg, NE NE SE section 3-24-15e, had Mississippi lime at 1,500 feet, total depth 1,547 feet, and was dry and abandoned.

Cowley County

Earl Wakefield No. 2 Whitson, NE NW SE section 8-32-4e, Winfield district, Cowley County, topped Arbuckle lime at 3,355 feet and was dry and abandoned at 3,400 feet, total depth.

Gulf Coast Fields

(Continued from Page 80)

Commerce Oil Co. made location for No. 1 Meaderbrook Development Co. in the J. R. Harris Survey. It is a deep test.

The Fairbanks field, Harris County, was defined and extended. South of production about 4,400 feet, E. M. Hailey No. 1 Fisher, A. Ayers Survey, was abandoned at 6,976 feet. Salt water was cored at intervals from 6,848-6,963 feet. The Cockfield was topped at 6,688 feet, and the Upper Saline Bayou at 6,963 feet. Gem Oil Co. No. 4 B. W. Reid, about 2,000 feet north of production in the G. Ayers Survey, perforated casing at 6,844-50 feet and flowed 362 bbls. in 12 hours through a quarter-inch choke. Three additional producers were completed and locations for three more wells were made. New activity was started by Amerada Petroleum Corp. and Stanolind Oil & Gas Co. on the Bullimore lease, George Ayers Survey. Gem Oil Co. spudded No. 3 B. W. Reid, A. Ayers Survey, and Windsor Oil Co. spudded No. 1 O. F. Parker in the J. Waugh Survey.

Jack Frazier No. 3 Hogg, Eureka field, Harris County, is taking a potential gauge after flowing 26 bbls. per hour through a quarter-inch choke through perforated casing at 7,725-40 feet. The top of the sand was 7,725 feet and the base at 7,757 feet. The well is southwest of the discovery well.

Magnolia Petroleum Co. staked location for No. 1 S. C. Drushell in the Cordele field, Jackson County, in the I.&G.N. Survey No. 18, a north offset to H. J. Porter No. 1 Pressley. H. J. Porter abandoned No. 1 Kern & Ackley at 2,943 feet. It is a north offset to No. 2 Foust, a dry gas well. South of Vanderbilt and on the West Ranch Prospect, Magnolia Petroleum Co. is preparing for a production test at No. 2 West Ranch, R. Musquiz Survey. The hole was drilled to a total depth of 7,207 feet, and 7-inch casing was cemented at 5,680 feet to test a sand just above 5,600 feet, which was indicated on an electrical survey.

The Cedar Point field, Galveston Bay, was defined to the northeast when Humble Oil & Refining Co. quit No. 3-95 State at a total depth of 6,528 feet. Only minor showings were cored in the discovery horizon. The well is located only one location from production which places a fault between it and the field.

Gulf Oil Corp. is squeezing off perforations in No. 21-C Kirby Lumber Co., a deep test located south of production in the Cleveland field, Liberty County. The 5-inch casing cemented at 9,508 feet, was perforated at 9,347-57 feet and the hole was swabbed dry.

In the Clear Lake field, Harris County, West Production Co. is reported to have completed No. 1 fee, the first oil well on the structure, but details of the sand record and the initial production of the well were not available.

COMPLETIONS ON TEXAS COAST

Brazoria County

Hastings field: Stanolind Oil & Gas Co. No. 28-C W. R. Curkett, perforated casing 6,040-76 feet, 597 bbls., quarter-inch choke; No. 20 Steve Paul, perforated casing 5,610-67 feet, 578 bbls., quarter-inch choke; No. 8 W. B. Wooster, perforated casing 5,476-5,522 feet, 589 bbls., quarter-inch choke. West Columbia field: Frost & Dunnan, 5,411 feet, 516 bbls., quarter-

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inch choke. E. W. Ogden No. 1 S. W. Pipkin, 2,436 feet, abandoned. Texas Co. No. 21 Abrams, perforated casing 5,269-5,300 feet, 521 bbls., quarter-inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 3-C Drought, perforated casing 7,095-98 feet, 390 bbls., quarter-inch choke. Cedar Point field: Humble Oil & Refining Co. No. 3-95 State, 6,528 feet, abandoned.

Fort Bend County

Thompson field: Humble Oil & Refining Co. No. 32-B Lockwood and Sharp, sand 3,515-34 feet, 150 bbls., quarter-inch choke.

Galveston County

Dickinson field: F. W. Bennett No. 1 Sam Levine, perforated casing 8,062-76 feet, 741 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 2 Fream, perforated casing 8,088-94 feet, 595 bbls., quarter-inch choke. Pure Oil Co. No. 1 M. Krohetz, perforated casing 8,068-84 feet, 841 bbls., quarter-inch choke; No. 1 Stewart-Roos, perforated casing 8,180-8,200 feet, 119 bbls. first 3 hours, quarter-inch choke. Hitchcock field: Maco Stewart No. 2 fee, perforated casing 5,131-49 feet, 480 bbls., quarter-inch choke.

Harris County

Clinton field: Stanolind Oil & Gas Co. No. 1 F. Stolmark, sand 3,814-29 feet, 289 bbls., quarter-inch choke. Fairbanks field: Amerada-Stanolind Oil & Gas Co. No. 1 E. W. Thompson, perforated casing 6,828-48 feet, 538 bbls., quarter-inch choke. Gem Oil Co. No. 4 B. W. Reid, perforated casing 6,844-50 feet, 362 bbls. 12 hours, quarter-inch choke. Smith & Ownby Drilling Co. No. 1 Gibson, perforated casing 6,846-50 feet, 709 bbls., quarter-inch choke. Windsor Oil Co. No. 4 Ley, perforated casing 6,838-43 feet, 670 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 9 L. S. Beamer, sand 5,801-6,048 feet, 605 bbls., quarter-inch choke.

Jackson County

Cordele field: H. J. Porter No. 1 Kern-Ackley, 2,943 feet, abandoned.

Jefferson County

North Cheek field: Magnolia Petroleum Co. No. 4 Phelan, 8,896 feet, abandoned.

Liberty County

Hardin field: Woodley Petroleum Co. No. 1-B Richardson, perforated casing 7,605-08 feet, 430 bbls., quarter-inch choke; No. 1 W. S. Partlow, perforated casing 7,638-42 feet, 499 bbls., quarter-inch choke.

Matagorda County

Markham field: C. G. Hamill No. 4 Hudson, 3,704 feet, abandoned.

Tyler County

Spurger field: Republic Production Co. and Houston Oil Co. No. 9 Hurd, 7,700 feet, 184 bbls., quarter-inch choke.

Wharton County

Withers field: H. C. Cockburn No. 1 G. W. Britton, sand 5,541-46 feet, 67 bbls., 7/64-inch choke.

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East Texas Fields

(Continued from Page 70)

up the hole several weeks ago, gave indications last week of yielding profitable gas production. Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 E. Robertson, M. Mann Survey, 2½ miles southwest of Longview in Gregg County, flowed an estimated 3,400,000 feet of gas per day from the Lower Glen Rose formation through perforations in the casing from 7,244-85 feet.

The completion of these two tests, along with the recent failure of Stanolind Oil & Gas Co. No. 1 T. Norris in Limestone County, and the completion of Hunt Oil Co. No. 1 Bradley as a gas-distillate well in Smith County, brings Lower Marine Trinity drilling activity to its lowest point in many months, with no tests in Eastern Texas actually drilling in the deep Marine series at present.

EAST TEXAS FIELD COMPLETIONS
(One-hour gauges)

Gregg County—Longview Area

Arkansas Fuel Oil No. 19-A J. C. and R. S. McKinley, 3,586-3,612 feet, 84 bbls. Atlantic Refining Co. No. 81 J. M. Moore, 3,486-3,579 feet, 108 bbls. Deep Rock-Murphy No. 17 H. Pritchard, 3,505-06 feet, 80 bbls. Stanolind Oil & Gas No. 16 Flemister, 3,558-3,646 feet, 59 bbls.; No. 5 A. J. Green, 3,564-3,617 feet, 60 bbls.

Gregg County—Kilgore Area

Davis & Hart No. 2-A J. S. and F. Elder, 3,513-54 feet, 6 bbls. Alsobrook & Nathan No. 2 A. W. Miller, 3,594-95 feet, 72 bbls. T. W. Lee No. 18 J. R. Carter, 3,601-02 feet, 30 bbls. Magnolia Petroleum Co. No. 9 Mitchell, 3,560-3,614 feet, 60 bbls. Shell Petroleum Corp. No. 10-A J. S. Elder, 3,543-3,615 feet, 70 bbls.; No. 73 J. B. Watson, 3,536-3,641 feet, 36 bbls.; No. 10 Williams-Brown, 3,550-3,638 feet, 70 bbls. Tide Water No. 21 V. M. Blackman, 3,635-40 feet, 48 bbls.

Rusk County—Kilgore Area

General American No. 11 T. H. Gill, 3,622-24 feet, 36 bbls. Hurricane Petroleum Co. No. 6 M. E. King, 3,675-3,733 feet, 80 bbls. Tide Water No. 17 W. P. Moore, 3,641-46 feet, 60 bbls.; No. 5 M. R. Terrell, 3,600-05 feet, 60 bbls.

Rusk County—Joiner Area

Atlantic Refining Co. No. 15-C L. J. Pinkstan, 3,628-3,722 feet, 35 bbls.; No. 17-D L. J. Pinkstan, 3,610-18 feet, 40 bbls. Humble Oil & Refining Co. No. 7 R. T. Cameron, 3,612-67 feet, 65 bbls.; No. 17-B White, 3,668-3,725 feet, 60 bbls. Hunt Oil No. 36-C R. W. Fair, 3,642-57 feet, 48 bbls.; No. 13 J. H. Wooley, 3,704-29 feet, 22 bbls. Lyde & Taylor No. 10 C. Young, 3,678-3,712 feet, 48 bbls. Magnolia Petroleum Co. No. 12 A. Perkins, 3,622-75 feet, 40 bbls. Ohio Oil No. 44 S. H. Moores, 3,651-3,705 feet, 32 bbls. Stanolind Oil & Gas No. 37-A H. C. Maxwell, 3,727-78 feet, 44 bbls.

Upshur County—Longview Area

B. F. Phillips and Dean No. 3 L. J. Everett, 3,604-05 feet, 120 bbls.

EAST CENTRAL TEXAS COMPLETIONS
(24-hour gauges)

Anderson County

In the Cayuga field, Tide Water No. 1 A. J. Rampy, 3,926-4,046 feet, 8 bbls.

Franklin County

In the Talco field, Humble Oil & Refining Co. No. 1 Humble-Penn, 4,199-4,281 feet, 165 bbls.

Henderson County

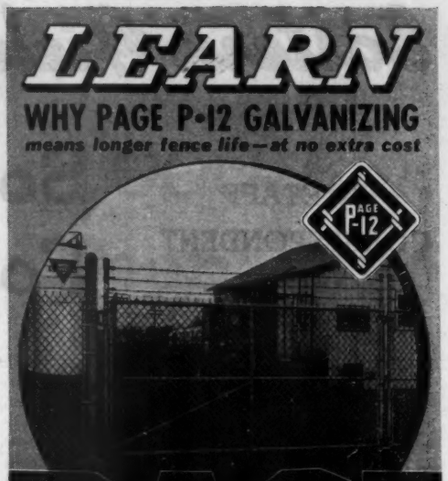
In the Cayuga field, F. M. Allison No. 8 Petitte, abandoned location; No. 9 Petitte, abandoned location. Jones-Mallory No. 1 R. Mallory, a wildcat, abandoned at 107 feet.

Limestone County

J. S. Cosden No. 1 J. J. Bower, abandoned at 1,010 feet.

Map Sixteen Illinois Counties

The Mid-Continent Map Co., Mattoon, Ill., which entered the Central Coal Basin field shortly after the first well was completed in Marion County, has completely mapped 16 counties in the basin, including all the counties in which production has been found. The company's maps show farm ownership, lease ownership and royalty ownership, and up-to-date development. Work in other counties is progressing.



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Eastern Field Report

By STAFF CORRESPONDENT

Southeast Ohio's Deep Test Found Nothing in Oriskany

PITTSBURGH, Pa., June 15.—A deep test in southeastern Ohio proved a failure in the Lower Devonian, but will make a gas well from a shallower formation. In the southwest limits of section 16, Sutton Township, Meigs County, Joe Rubin drilled a test on the R. Tyree farm to 3,800 feet and found only a small broken section of Oriskany sand void of any showing. The well was plugged back to the shale at 3,180 feet where it has a volume of 100,000 feet of gas.

SOUTHEAST OHIO

In Athens County, N. C. Leeper completed No. 32 Cunningham Heirs in section 29, Rome Township, in Maxon sand at 911 feet. It is a gas well gauging 150,000 feet a day. In section 2, Carthage Township, Townsend & Gage completed a test on the W. H. Hartwell farm in the same formation at 900 feet and it gauges 90,000 feet a day.

In Licking County, C. R. Settles and others completed a 3-bbl. pumper on the Eva Robinson farm in section 15, Mary Ann Township in Berea sand at 746 feet.

In Medina County, Preston Oil Co. completed a fair shallow producer. In Tract 16, Lot 5, the No. 25 Bertha B. and J. J. Parent produced 28 bbls. the first day after shot from the Berea grit at 336 feet.

In Washington County, E. W. Cline completed No. 18 Coal Lands in section 21, Aurelius Township, in Berea grit at 1,670 feet. It produced 5 bbls. the first day.

In Trumbull County, Norwood P. Johnson and others have been unable to recover the bottom joints of pipe lost after collapse in the test on the G. M. Porter farm in Mecca Township.

SOUTHWEST PENNSYLVANIA

In Amwell Township, Washington County, Pennsylvania, Wise Oil & Gas Co. deepened No. 2 Ensley Kelsey to the Fifth sand at 3,041 feet and is a 5-bbl. well. It will be shot with 40 quarts.

In Allegheny County, Equitable Gas Co. deepened No. 3,832 John H. Link in Ross Township from 1,910 feet without result. It was abandoned at 2,033 feet.

J. S. Walley and others have rigged up a test on the Anna H. Brown farm in Shaler Township. In Harmar Township, Rodgers Development Co. is down 2,135 feet in No. 3 Grace W. Wolf farm. In Patton Township, T. W. Phillips Gas & Oil Co. had reached 2,500 feet on the Grimm Coal Co. lease.

In Washington County, Carnegie Natural Gas Co. is down 2,993 feet deepening No. 1 J. N. Guthrie. It had 106,000 feet of gas at 2,988 feet.

In Amwell Township, Union Gasoline & Oil Corp. is down 1,570 feet in No. 2 Leroy Vankirk. F. K. Fawcett and others are deepening No. 1 L. Bronder, same township, and have reached 2,250 feet. Harry Williams & Co. were below 500 feet on the Jason Buchanan farm.

In North Strabane Township, Washington County, Penn Ohio Oil & Gas Co. had reached 620 feet on the W. E. Davis farm.

Greene County

In Richhill Township, Greene County, Penn Ohio Oil & Gas Co. has a rig on the H. W. Ealy (Clinton Conklin) farm. Furman Nuss started drilling on the Charles Swart farm, same township.

In Center Township, Charles L. Mong and others made a location for No. 3 John Metz farm. J. B. Orndoff drilled by lost tools at 1,535 feet in No. 2 G. M. Scott and shut down. Union Gasoline & Oil Corp. is down 2,175 feet in No. 4 Braddock and Cook, same township.

In Washington Township, Carnegie Natural Gas Co. is drilling at 2,340 feet deepening No. 2 Sadie A. Connor. The bottom of the Big Injun sand was at 2,226 feet. The Equitable Gas Co. made a location on the John Huffman farm. In Aleppo Township, Cochran and others are cementing and cleaning out at 1,700 feet in No. 4 John Strope.

Equitable Gas Co. had reached 3,019 feet deepening No. 1 C. S. Orndoff, Jackson County; drilling at 3,115 feet after the gas blew down to 152,000 feet a day in No. 1 C. J. Conklin, Center Township; drilling at 3,068 feet in No. 1 Jess Lapping, Franklin Township, at 2,175 feet in No. 1 S. G. Durr, Greene Township.

In Wayne Township, H. D. Freeland cleaned out and shot No. 2 D. L. Freeland and increased production from 20 bbls. a day to 75 bbls. a day for the three days following the shot.

Deep Tests

In Westmoreland County, Peoples Natural Gas Co. has been delayed in the rotary test on the John S. Marshall farm on the Grapeville anticline in Penn Township with mechanical troubles and then had the tools stuck at a depth of 7,315 feet.

In Allegheny County, South Penn Oil Co. reached 5,835 feet on the Fred Backhaus farm in the Kellersburg anticline in West Deer Township, and expect to reach the Tully lime within the next day.

In Fayette County, the test on the J. R. Thompson farm on Chestnut Ridge in Wharton Township by the Greensboro Gas Co. has been cased in the Tully lime to prevent caving. The Tully was topped at 6,570 feet and 7-inch extreme line casing run to 6,607 feet. The tools are now at 6,680 feet. On this structure in North Union Township, Wasson & Co. lowered the casing in the test on the J. H. Sorg farm and finally shut off the water and gas which was being carried. The present depth is 2,575 feet. In Springhill Township, on this structure, L. J. Houze Convex Glass Co. has reached 4,600 feet in the test on the Paul Dunham farm north of Wymps Gap.

In Beaver County, John T. Galey and others are down 550 feet in the test on the Eliza Allen Heirs in South Beaver Township.

WEST VIRGINIA

One oil well was completed in West Virginia during the week. In Grant district, Ritchie County, the Square Oil Co. completed the second test on the Merle Carpenter farm in the Squaw sand at 1,890 feet and it started at 25 bbls. a day.

In Cabell County, R. H. Adkins, Trustee, completed the test on the Jerusha Beckett farm in Grant district at 2,291 feet. Berea at 2,265-81 feet yielded 260,000 feet of gas after the shot. In Barboursville district, Hess Gas Co. completed the test on the Maud May farm at 3,029 feet. It produced 68,000 feet of gas per day at 2,690-95 feet.

In Gilmer County, Paul K. Weekley on the George Ellyson farm in DeKalb district has a gas well gauging 190,000 feet a day.

In Kanawha County, the Pure Oil completed No. 283 on the Williams Coal Co. lease in Cabin Creek district in Berea sand as a gas well, gauging 500,000 feet a day.

In Monongalia County, Philadelphia Oil Co. completed No. 5,410 on the Stephen Tennant farm in Clay district in Bayard sand at 3,661 feet. It gauges 150,000 feet a day.

In Ritchie County, Glen F. McBurney and others on the Flanigan Heirs farm in Clay district drilled through Injun sand to 2,000 feet and it was dry. In Grant district, Carnegie Natural Gas Co. deepened No. 973 on the Eva J. Syers farm through Squaw sand to 2,090 feet and it had only 13,000 feet of gas and will be abandoned.

In Roane County, United Fuel Gas Co. completed No. 4,798 Samuel W. Vineyard farm in Geary district as a gas well at 1,900 feet. It gauged 92,000 feet a day at 1,846-49 feet.

In Wetzel County, Hazlett Brothers and Conley completed a test on the Lane Mason farm in Proctor district in the Cow Run sand at 580 feet and it gauged 250,000 feet a day and will be produced.

In Wirt County, Glenn W. Roberts drilled No. 3 on the N. T. McConaughey farm in Burning Springs district through the Squaw sand at 1,974 feet and it was a dry hole.

Oriskany Gas Field

Two wells were completed in the Oriskany gas pools in Kanawha County. In Poca district, the United Fuel Gas Co. completed No. 4,790 on the W. H. Sisson farm at a total depth of 4,997 feet. The Oriskany was topped at 4,985 feet and the final gauge was 17,694,000 feet a day.

In Union district, Kanawha County, the West Virginia Gas Corp.'s test on the R. W. St. Clair and others lease was completed at 4,967 feet. The Oriskany was reached at 4,927 feet. The well gauged 1,385,000 feet a day 12 hours after the shot. In this district, the test of the Columbian Carbon Co. on the Nelson H. Cavender farm was shot and the gauge improved to 785,000 feet a day 12 hours after the shot.

In Union district, the West Virginia Gas Corp. topped Corniferous lime at 4,788 feet on the J. E. Layne and others lease. It is the only test drilling in the district.

In Poca district, Joe Rubin cased the test on the Carney Heirs farm at 4,815 feet, cemented it and is ready to resume. The Mullins Gas Co. has reached 4,410 feet on the Esta Fisher Bonham farm. Guy B. Ray is down 3,820 feet in the Emmett Thaxton test. United Carbon Co. is drilling at 1,375 feet in the I. C. Miller test and at 1,780 feet on the Louisa E. Long farm.

The United Fuel Gas Co. in the Poca district reached 1,442 feet in No. 4,788 I. W. Cavender; was drilling No. 4,791 W. J. Glass at 655 feet and was below 2,090 feet in No. 4,793 W. A. Fisher and others. The Liosag Fuel Co. is fishing at 4,850 feet in the H. C. Matthews test. Phillip K. Harness is down 2,810 feet on the Lena Snodgrass farm; Spartan Gas Co. at 1,402 feet on the R. B. and Fred Baldwin land; Poca Fork Oil & Gas Co. at 720 feet in the Levi Combs test; Geary Morley Gas Co. at 765 feet on the Diana J. Milam Heirs land; Columbian Carbon Co. at 3,810 feet in the Boyd Castro test; at 1,739 feet in the Johnson and Gibson test; spudding in on the L. P. Rollins land and building rig for the Lena Castro test. The West Virginia Gas Corp. has started drilling the Spencer-Canterbury test.

In Malden district, North Eight Producing Co. topped Corniferous lime at 4,747 feet in the test on the L. E. and R. Belcher farm. In Elk district, Columbian Carbon Co. is down 4,695 feet in the B. F. Jones test, and at 1,340 feet in No. 12 C. W. Vickers.

Deep Tests

In Jackson County, the Cunningham Gas Co. had reached 4,350 feet on the E. F. Cunningham farm in Ripley district, being delayed by a fishing job. In Ravenswood district, Joe Rubin and others shut down at 1,470 feet on the W. J. Brown farm, for a new line. In Washington district, United Carbon Co. is drilling at 1,725 feet in No. 3 Elizabeth W. Perkins.

In Pleasants County, Columbian Carbon Co. was drilling below 600 feet in the test on the Burning

(Continued on Page 98)

California Field Report

By
L. P. STOCKMAN

Standard Gets 15,000-Bbl. Well in Greeley Deep Zone

LOS ANGELES, Calif., June 20.—Standard Oil Co. focused the attention of operators on the Greeley field of Kern County by completing No. 11-2 Kern County Land, section 20-29-26, flowing 15,090 bbls. of very clean 36.7-gravity oil and 12,000,000 feet of gas per day from the Rio Bravo zone at 11,500 feet. This well failed to develop commercial production in the productive Stevens zone. Standard Oil Co. has severely reduced its production and for the month of July, the umpire will give the well an allowable of 300 bbls. per day and the company will either reduce current production to this amount or kill the well entirely. It was completed flowing through 96/64-inch and 64/64-inch casing beans and a 16/64-inch tubing bean, and showed a tubing pressure of 730 pounds and a casing pressure of 1,220 pounds. The well came in flowing 6,700 bbls. per day but gradually and consistently built up to better than 15,000 bbls. per day with every indication pointing to the probability that it is capable of flowing 20,000 bbls. daily. Top of the newly discovered Rio Bravo zone in the Greeley field was logged at 11,417 feet and the well was finished with a 6⅝-inch water string landed at 11,400 feet and a perforated liner.

The unusually large production definitely confirms the belief that the Rio Bravo zone is the most productive ever found in the state and that it may be expected in the Ten Section, Canal, Canfield Ranch and Buena Vista Lake fields, as well as in other similar districts in the southern end of San Joaquin Basin. It also tends to confirm the opinion of operators in the Rio Bravo field that their wells are capable of flowing from 10,000 to more than 20,000 bbls. daily. Up to the present time this has been more or less conjectural as none of the wells completed in the Rio Bravo field have been given the chance of establishing maximum potentials.

Similar large production may ultimately be found in the Wasco field discovered a short time ago by Continental Oil Co. as this zone has a tremendous reservoir pressure and is highly saturated.

In the Rio Bravo field, Superior Oil Co. is to complete two more wells and General Petroleum Corp.'s drilling schedule calls for completion of No. 2 Wagoner before June 25. No. 1 Anderson of Superior Oil Co., most northeasterly well in the field, should show substantial production as top of the oil sand was logged at 11,386 feet. Superior No. 4 Wagoner topped the pay at 11,365 feet and should be completed almost simultaneously with No. 1 Anderson. Union Oil Co. is not experiencing much success with its fishing job in No. 2-34 Kern County Land which has been held up for two months with mechanical trouble which developed after the crew had cemented a string of 7⅝-inch casing at 11,200 feet. The casing collapsed at 6,100 feet and while that portion above 6,100 feet has been recovered the crew has been unable to mill past the top of the collapsed part. Union No. 3-34 Kern County Land has just passed 10,600 feet, and No. 4-34 has just been spudded in.

New Field in Fresno County

Petroleum Securities Co. will proceed with a production test on No. 2 Gatchell in the Guijarral Hills section of Fresno County. As two separate possibly productive zones have been logged, a new oil field may be officially recognized within another few days. This wildcat, located in section 18-20-16, has been standing for the past two months at 6,850 feet, as the company did not wish to make a production test until some litigation had been cleaned up. This well has a string of 8⅝-inch casing cemented at 6,690 feet, and it is the intention of the company to make a test of the upper zone first and then go ahead with a test of the second zone as there is a possibility that both may be produced together as no intermediate water was logged.

The upper zone was cored at 6,711-24 feet and the second at 6,814-49 feet. The thickness of the lower zone has not been determined as the bit was still in the pay when drilling operations were suspended. The interval between the zones consists of shale and siltstone with the probability that the lower horizon is the equivalent of the Avenal zone of Eocene age discovered several months ago in the Kettleman North Dome field by Kettleman North Dome Association. No. 2 Gatchell appears almost certain of opening an entirely new oil field in the northern end of the Coalinga-Kettleman anticline, and since cores indicate an excellent saturation and porosity substantial production may be anticipated. Most of the acreage is held in large blocks and development will be along conservative lines unless the field proves larger than the seismograph survey indicated, in which event the area will become exceptionally active.

Probable New Zone

Ohio Oil Co., which recently discovered an oil sand in the Buena Vista Lake gas field, is believed to have found the highly productive Rio Bravo zone in No. 8-A Kern County Land. No. 8-A Kern County Land is the well that discovered a zone higher up in the hole and so for the first time in California a commercial dry-gas field will soon become a combination dry-gas and crude-oil field. This well is down 10,990 feet and still coring ahead in the pay. Gas trap and tanks have been installed and an early production test is contemplated. Ohio Oil Co. has been exceptionally successful in its California wildcat drilling program having discovered new fields at Buena Vista Lake, Canal, Playa Del Rey and a possible new dry-gas field in the Willows district of Glenn County. The Buena Vista Lake gas field is at the extreme end of Buena Vista Lake which at various times contains water and no one except Ohio Oil Co. has been able to complete a commercial producer due to the extensive holdings of that company. Ohio Oil Co. has completed five commercial gas wells at Buena Vista Lake in sections 5, 31 and 32 in Township 31, Range 26. The discovery well, No. 1-A Kern County Land, is located in section 31-31-26, and all five producers are on property leased from Kern County Land Co. During the past winter, Buena Vista Lake gas field was on commercial production along with several other gas fields but has been shut in since the latter part of April.

Wasco

Continental Oil Co., discoverer of the Wasco field, appears to have found the Olcese sand in No. 1-C Kern County Land in a wildcat in section 26-27-24, south of the Wasco field, indicating the company may be on the way to another primary discovery. This wildcat was taken over from Seaboard Oil Co. which had suspended work at 10,450 feet following the failure to log the Stevens zone. No. 1-C logged 22 feet of barren gray sand at 11,122-42 feet, and if this is the Olcese sand this wildcat is running substantially higher than the discovery well at Wasco in section 8-27-24, as Continental's discovery well at Wasco logged this sand at 11,581 feet. The area was seismographed at the same time that the survey was conducted at Wasco, and Continental found seismograph highs in both areas. Wasco has already been proved highly productive above 15,000 feet, and it remains to be seen if the second seismograph high will be found productive. These two areas are only a few miles apart and structural conditions should be somewhat similar. Standard Oil Co. has started offsets to Continental's discovery well in the Wasco field and has just spudded in No. 1 Mushrush in section 7-27-24, and is rotating ahead in No. 8-1-B Kern County Land in section 17-27-24, at 5,760 feet. Continental Oil Co. spudded No. 3-A Kern County Land in section 8-27-24, on June 7. Continental's first wildcat in the Wasco field proved a failure although it showed some production possibilities in the Stevens interval before mechanical difficulties developed and forced suspension of work.

Wilmington

Recompletion a few days ago of No. 1-W of George F. Getty, Inc., in the Ford zone is expected to result in the deepening of several upper zone wells as this well, located in the townlot section of the Wilming-

(Continued on Page 91)

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	June 10		June 3			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	203,139	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	118,613	16,945	.....	.....	1,336,801	1,426,970
Kerosene	.....	.....	.....	.....	199,453	198,231
Foreign exports—						
Crude oil	143,848	20,550	525,483	75,069	11,184,356	5,761,553
Fuel oil	215,936	30,848	278,913	39,845	4,022,112	6,206,279
Diesel and gas oil	177,996	25,428	265,974	37,993	2,757,017	3,088,976
Gasoline	71,553	10,222	147,899	21,128	2,946,551	3,344,640
Kerosene	68,928	9,847	.....	.....	568,502	969,369
Other unfinished oil	.....	.....	.....	.....	.....	402,700
Coastwise-domestic—						
Crude oil	169,411	24,202	70,145	10,021	4,947,576	3,090,891
Fuel oil	275,265	39,324	65,068	9,295	4,841,951	6,665,832
Diesel and gas oil	32,885	4,698	39,613	5,659	776,967	1,052,089
Gasoline	156,516	22,359	323,680	46,240	6,651,723	6,008,940
Kerosene	12,148	1,735	.....	.....	130,434	89,702

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	.....	.....	.....	.....	9,499	25,778
Asphalt	.....	.....	62,461	8,923	346,862	141,401
Lubricants	.....	.....	7,660	1,094	13,665	12,857
Foreign exports—						
Crude oil	.....	.....	.....	.....	2,504,589	1,391,317
Fuel oil	121,680	17,383	35,302	5,043	1,060,946	934,788
Diesel and gas oil	49,463	7,066	134,649	19,236	918,710	1,261,224
Gasoline	58,450	8,350	266,855	38,122	2,189,869	2,472,822
Kerosene	5,871	839	40,060	5,723	439,164	302,927
Asphalt	56,258	8,037	.....	.....	56,258	.....
Lubricants	.....	.....	.....	.....	177,971	263,364
Coastwise-domestic—						
Fuel oil	64,314	9,188	177,212	25,316	2,988,626	2,809,962
Diesel and gas oil	18,962	2,712	19,605	2,801	898,620	395,011
Gasoline	157,601	22,514	238,415	34,059	2,994,735	1,951,700
Kerosene	7,523	1,075	16,723	2,389	281,609	75,066

California Oil Field Operations for March, 1938

CRUDE PETROLEUM PRODUCTION

(Figures of Production and Stocks are in barrels of 42 gallons)

Group No. 1—	Total production March	Daily average Mar., 1938	Daily average Feb., 1938	Daily average Mar., 1937
Belridge—North	469,447	15,143	15,123	15,071
Belridge—South	45,433	1,466	1,618	2,027
Canal	38,840	1,253	1,310	.....
Canfield ranch	4,963	160	124	.....
Coalinga	354,136	11,424	11,148	14,918
Edison	120,983	3,903	3,708	4,737
Elk Hills	344,725	11,120	11,048	9,333
Fruitvale	278,083	8,970	9,310	8,823
Greeley	102,107	3,294	3,676	435
Kern River	439,265	14,170	14,719	15,251
Kettleman Middle dome	2,212	71	80	184
Kettleman North dome	2,550,181	82,264	80,416	77,048
Lost Hills	120,161	3,876	3,696	3,999
McKittrick	116,760	3,766	4,318	1,987
Midway-Sunset	2,192,580	70,728	74,394	69,159
Mountain View	390,840	12,608	13,512	20,309
Mount Poso	613,463	19,789	20,463	17,061
Rio Bravo	31,066	1,002	1,672	.....
Round Mountain	529,906	17,094	17,340	11,218
Ten Section	162,337	5,237	4,578	1,541
Wheeler Ridge	9,564	309	313	337
Group No. 2—				
Capitan	96,594	3,116	3,022	2,063
Elwood	222,522	7,178	7,697	9,419
Rincon	116,888	3,770	3,604	2,402
San Miguelito	93,231	3,008	4,157	2,605
Santa Barbara	15,621	504	502	707
Santa Maria	537,220	17,330	15,608	6,021
Summerland	990	32	32	31
Ventura Avenue	1,145,178	36,941	36,989	33,389
Ventura-Newhall	144,365	4,657	5,537	4,599
Watsonville	1,550	50	50	60
Group No. 3—				
Brea-Olinda	188,531	6,082	6,269	8,013
Coyote—East	117,759	3,797	3,990	3,189
Coyote—West	260,951	8,418	8,095	7,436
Dominguez	894,549	28,857	29,322	24,555
El Segundo	495,849	15,989	16,711	3,960
Huntington Beach	1,061,246	34,234	34,759	36,692
Inglewood	500,535	16,146	16,016	13,389
Lawndale	2,140	69	90	98
Long Beach	1,762,249	56,847	57,550	61,285
Los Angeles-Salt Lake	17,355	560	546	821
Montebello	251,466	8,112	8,531	9,723
Playa Del Rey	208,016	6,710	7,172	9,585
Potrero	9,113	294	397	287
Richfield	294,105	9,487	9,942	7,956
Rosecrans	184,700	5,958	6,362	2,518
Santa Fe Springs	1,208,879	38,996	40,583	44,558
Seal Beach	297,473	9,596	9,794	8,966
Torrance	246,174	7,941	8,013	7,623
Whittier	27,635	892	922	935
Wilmington	3,121,557	100,695	101,163	8,122
Total March	22,441,293	723,913	735,991	594,445
Total February	20,607,735	735,991	.....	.....
Decrease (*Increase)	*1,833,558	12,078	.....	.....

OIL FIELD DEVELOPMENT

Group No. 1—	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Belridge—North	...	7	5	5,589	61	...	1
Belridge—South	...	...	...	.....	130	...	...
Canal	1	3	...	.....	3	...	...
Canfield ranch	1	...	...	.....	1	...	...
Coalinga	2	4	...	.....	838	1	...
Edison	...	1	...	.....	87	...	...
Elk Hills	...	...	...	.....	172	...	...
Fruitvale	1	2	1	110	164	1	...
Greeley	...	6	1	650	13	4	...
Kern River	2	3	...	.....	1,354	1	...
Kettleman Middle dome	...	...	...	.....	3	...	...
Kettleman North dome	...	18	...	.....	192	...	...
Lost Hills	1	4	1	30	225	1	...
McKittrick	1	...	...	.....	214	2	...
Midway-Sunset	3	7	3	528	2,533	3	1
Mountain View	...	...	...	.....	194	1	...
Mount Poso	5	7	2	305	279	...	...
Rio Bravo	1	7	2	1,866	3	...	...
Round Mountain	1	3	2	553	176	2	...
Ten Section	1	3	2	5,790	15	...	...
Wheeler Ridge	...	1	...	.....	26	...	...
Group No. 2—							
Capitan	2	...	...	.....	42	...	...
Elwood	...	...	...	.....	71	...	...
Rincon	1	2	1	287	40	...	...
San Miguelito	...	...	...	.....	16	...	...
Santa Barbara	...	...	...	.....	35	...	1
Santa Maria	6	15	15	13,853	292	1	4
Summerland	...	1	...	.....	18	...	...
Ventura Avenue	5	10	3	5,203	277	...	...
Ventura-Newhall	2	3	1	65	559	...	1
Watsonville	...	...	...	.....	7	...	...
Group No. 3—							
Brea-Olinda	...	1	...	.....	354	...	1
Coyote—East	1	2	...	.....	88	...	...
Coyote—West	1	1	...	.....	45	...	...
Dominguez	...	4	...	.....	180	...	...
El Segundo	1	...	2	1,440	64	1	...
Huntington Beach	...	1	...	.....	560	...	1
Inglewood	...	...	...	.....	200	...	...
Lawndale	...	...	...	.....	6	...	...
Long Beach	6	6	4	1,285	1,249	1	4
Los Angeles-Salt Lake	...	...	...	.....	113	...	...
Montebello	1	7	...	.....	216	...	...
Playa Del Rey	...	...	...	.....	198	...	3
Potrero	1	...	...	.....	11	...	...
Richfield	3	5	3	1,314	300	1	...
Rosecrans	1	2	1	1,071	89	...	...
Santa Fe Springs	...	...	1	59	664	...	2
Seal Beach	...	...	...	.....	111	...	...
Torrance	3	6	2	445	514	...	...
Whittier	...	...	...	.....	135	...	...
Wilmington	21	38	30	49,847	430	...	...
Miscellaneous drilling	6	46	...	.....	.....	6	...
Group No. 4, gas fields—							
Buena Vista Lake	...	1	...	.....	4	...	...
Buttonwillow	...	...	...	.....	16	...	...
Chowchilla	...	...	...	.....	.....	...	...
Delano	...	...	...	.....	1	...	...
Dudley Ridge	...	...	...	.....	.....	...	...
Goleta	...	...	...	.....	.....	...	...
McDonald Island	...	1	...	.....	4	...	...
Rio Vista	1	2	...	.....	13	...	...
Semi-Tropic	...	1	...	.....	20	...	...
Tracy	...	...	...	.....	5	...	...
Total March	82	231	82	90,290	13,630	26	19
Total February	121	242	70	78,461	13,605	17	17
Increase (*decrease)	*39	*11	12	11,829	25	9	2

California Oil Field Operations for April, 1938

CRUDE PETROLEUM PRODUCTION

Group No. 1—	Total production April	Daily average Apr., 1938	Daily average Mar., 1938	Daily average Apr., 1937
Belridge—North	475,300	15,843	15,143	14,869
Belridge—South	35,239	1,174	1,466	1,733
Canal	55,672	1,856	1,253	.....
Canfield Ranch	4,154	138	160	.....
Coalinga	393,880	13,129	11,424	15,340
Edison	106,114	3,537	3,903	4,490
Elk Hills	333,596	11,120	11,120	10,719
Fruitvale	277,788	9,260	8,970	8,968
Greeley	99,114	3,304	3,294	494
Kern River	400,435	13,348	14,170	15,357
Kettleman Middle dome	1,791	60	71	168
Kettleman North dome	2,428,724	80,957	82,264	78,603
Lost Hills	114,898	3,830	3,876	3,880
McKittrick	114,094	3,803	3,766	2,944
Midway-Sunset	1,978,044	65,935	70,728	72,406
Mountain View	366,317	12,211	12,608	21,059
Mount Poso	582,585	19,420	19,789	17,784
Rio Bravo	93,703	3,123	1,002	.....
Round Mountain	501,934	16,731	17,094	12,146
Ten Section	184,635	6,155	5,237	2,410
Wasco*	11,674	389	.....	.....
Wheeler Ridge	9,407	314	309	342
Group No. 2—				
Capitan	92,049	3,068	3,116	2,277
Elwood	198,341	6,611	7,178	9,433
Rincon	114,814	3,827	3,770	2,648
Santa Miguelito	88,963	2,965	3,008	2,804
Santa Barbara	13,246	442	504	711
Santa Maria	534,164	17,805	17,330	7,260
Summerland	872	29	32	34
Ventura Avenue	1,113,419	37,114	36,941	35,238
Ventura-Newhall	155,094	5,170	4,657	4,952
Watsonville	1,200	40	50	60
Group No. 3—				
Brea-Olinda	177,711	5,927	6,082	8,484
Coyote—East	106,816	3,560	3,797	3,408
Coyote—West	269,935	8,998	8,418	8,062
Dominguez	802,133	26,737	28,857	23,876
El Segundo	432,553	14,418	15,989	5,546
Huntington Beach	1,025,814	34,193	34,234	37,863
Inglewood	477,744	15,924	16,146	14,197
Lawndale	2,139	71	69	97
Long Beach	1,745,518	58,185	56,847	61,310
Los Angeles-Salt Lake	16,612	553	560	765
Montebello	256,536	8,551	8,112	9,726
Playa Del Rey	202,888	6,763	6,710	9,190
Potrero	12,478	416	294	340
Richfield	290,227	9,674	9,487	8,372
Rosecrans	207,144	6,905	5,958	2,891
Santa Fe Springs	1,118,957	37,298	38,996	44,012
Seal Beach	284,270	9,476	9,596	9,329
Torrance	288,198	9,607	7,941	7,997
Whittier	28,345	945	892	934
Wilmington	3,020,152	100,672	100,695	21,673
Total April	21,647,430	721,581	723,913	627,201
Total March	22,441,293	723,913	.....	.....
Decrease	793,863	2,332	.....	.....

OIL FIELD DEVELOPMENT

Group No. 1 —	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Belridge—North	1	7	...	.....	60	...	...
Belridge—South	...	...	...	.....	85	...	...
Canal	1	2	2	4,964	5	...	...
Canfield Ranch	...	1	...	.....	1	...	...
Coalinga	2	5	...	.....	848	2	...
Edison	...	1	...	.....	88	1	...
Elk Hills	...	...	...	.....	173	...	...
Fruitvale	1	1	2	685	166	...	1
Greeley	...	3	1	798	11	2	...
Kern River	4	3	3	236	1,357	...	...
Kettleman Middle Dome	...	...	...	.....	3	...	...
Kettleman North Dome	3	17	1	1,890	189	...	1
Lost Hills	...	3	1	24	227	1	...
McKittrick	3	2	...	.....	221	...	...
Midway-Sunset	3	3	6	773	2,474	...	5
Mountain View	1	...	...	.....	194	...	2
Mount Poso	2	8	2	512	292	4	...
Rio Bravo	4	9	2	3,669	5	...	...
Round Mountain	5	3	2	432	178	1	...
Ten Section	3	4	2	7,140	17	...	...
Wasco	...	...	1	3,000	1	...	...
Wheeler Ridge	...	1	...	.....	22	...	...
Group No. 2—							
Capitan	...	1	...	.....	42	...	...
Elwood	...	...	...	.....	74	...	...
Rincon	...	2	1	292	41	...	...
San Miguelito	...	...	...	.....	16	...	1
Santa Barbara	...	...	...	.....	34	...	...
Santa Maria	13	17	10	7,888	288	1	...
Summerland	...	...	...	.....	18	...	...
Ventura Avenue	3	9	4	5,184	281	...	...
Ventura-Newhall	2	7	...	.....	554	...	1
Watsonville	...	...	...	.....	7	...	...
Group No. 3—							
Brea-Olinda	...	1	...	.....	346	...	...
Coyote—East	...	1	1	270	85	...	...
Coyote—West	...	2	...	.....	45	...	...
Dominguez	...	3	1	164	181	...	...
El Segundo	2	1	...	.....	60	...	1
Huntington Beach	...	1	1	25	570	...	1
Inglewood	...	...	...	.....	207	...	...
Lawndale	...	...	...	.....	6	...	...
Long Beach	4	8	2	1,125	1,253	...	2
Los Angeles-Salt Lake	...	...	...	.....	113	...	...
Montebello	3	10	1	1,650	219	...	1
Playa Del Rey	...	...	...	.....	197	...	2
Potrero	...	1	...	.....	10	...	...
Richfield	2	5	1	150	303	...	1
Rosecrans	4	4	2	2,404	92	...	...
Santa Fe Springs	...	...	...	.....	650	...	...
Seal Beach	...	...	...	.....	110	...	...
Torrance	4	6	6	931	525	...	...
Whittier	...	...	...	.....	135	...	...
Wilmington	24	34	31	44,397	462	...	...
Miscellaneous drilling	12	38	...	.....	.....	8	...
Group No. 4, gas fields—							
Buena Vista Lake	...	1	...	.....	4	...	...
Buttonwillow	...	...	...	.....	19	...	...
Chowchilla	...	...	...	.....	.....	...	...
Delano	...	...	...	.....	1	...	...
Dudley Ridge	...	...	...	.....	.....	...	...
Goleta	...	...	...	.....	.....	...	...
McDonald Island	...	...	1	gas	4	...	...
Rio Vista	1	...	2	gas	13	...	...
Semi-Tropic	...	...	...	.....	.....	1	...
Tracy	...	...	...	.....	1	...	...
Total April	107	225	89	88,604	13,583	21	19
Total March	82	231	82	90,290	13,630	26	19
Decrease (*increase)	*25	6	*7	1,686	47	5	...

ton field, showed an initial production of 528 bbls. of 29.2-gravity oil with bottom of the hole at 5,701 feet. The well was deepened from the Ranger to the Ford zone. It is in the southeastern end of the original section of the townlot area, and may lead to extensive development. Heretofore the Ford zone has proved rather spotty in the townlot section and not any too productive in the Ford and drawbridge area. Getty No. 1-W was finished with a 6⅝-inch full string including 114 feet of perforated landed at 5,635 feet and cemented through perforations at 5,565 feet. In addition to the perforated landed in the bottom of the hole the string was gun perforated at 5,150-5,275 feet and the well brought in flowing through a 39/64-inch bean under a tubing pressure of 100 pounds and a casing pressure of 750 pounds. Production was still cutting 6 per cent at last reports, but is expected to clean up.

Only one well was completed in the Wilmington field during the week but the list for the coming week will probably include several wells now being prepared for production tests. The well finished was Union Pacific Railroad Co. No. 7-E which was brought in flowing 5,339 bbls. of clean 24.6-gravity oil and 600,000 feet of gas per day from the Ranger and Terminal zones. No. 7-E was bottomed at 3,900 feet and the hole finished with a combination liner and flow string with a packer on the tubing at 3,457 feet and a cement job through perforations at 3,469 feet. In the bottom of the hole the company landed 475 feet of 60-mesh perforated with perforations at 3,471-3,567 feet, 3,577-3,651 feet, 3,670-3,718 feet, 3,738-3,801 feet, and 3,821-3,900 feet and above this a 6⅝-inch flow string landed at 2,898 feet.

Drilling operations in the Long Beach harbor section of the Wilmington field are tapering off, and will probably continue to show a gradual decline as operators have already drilled the necessary offsets and are now proceeding with the drilling of inside locations.

Kettleman Hills

Standard Oil Co. completed a well in the Avenal zone of Eocene age when No. 27-21-J, in section 21-21-17, was brought in flowing 713 bbls. of 47.8-gravity oil, 50 bbls. of water and 13,000,000 feet of gas per day from 10,800 feet. This well was carried down to 10,919 feet but was plugged back to the completion depth because of bottom water. The hole was finished with 113 feet of 4¾-inch liner including 75 feet of perforated and 10,797 feet of 2½-inch tubing. Standard Oil Co. is completing preparations to make a production test on No. 26-13-H, in section 13-21-16. This well was drilled ahead of production in the northwestern end of the Kettleman North Dome field. No. 46-13-H is bottomed in the Avenal zone at 10,839 feet and has a 6⅝-inch water string cemented at 10,800 feet. Top of the Avenal zone was logged at 10,800 feet at about the point selected for the bottom of the water string.

Rosecrans

Universal Consolidated completed No. 3 Trust, in the Rosecrans field, flowing 1,730 bbls. of clean 32.6-gravity oil and 1,000,000 feet of gas per day through a 1-inch bean from 7,712 feet. This new well, located on a lease held successively by Union Oil Co., Barnsdall Oil Co., Republic Petroleum Co. and Universal Consolidated Oil Co. was finished with an 8⅝-inch water string cemented at 7,412 feet and 341 feet of 6⅝-inch liner including 309 feet of perforated and 7,551 feet of 2½-inch tubing. It is flowing under a tubing pressure of 180 pounds and a casing pressure of 1,000 pounds.

Montebello

Drilling in the western extension of the Montebello field continues to increase and a further gain will be recorded immediately upon completion of another well or two in the extreme west end of the area. Up to the present operators have used extreme caution in moving westward but if Brookline Oil Co. succeeds in developing commercial production in the Miocene there will be a wild scramble to drill in the area west of present activity. Until recently operators had not been interested in the west end but this is gradually changing and has led to several lease transactions. During the past week, Standard Oil Co. completed its first deep-zone producer in the west end of the Montebello field and now that the well is on production we may expect this company to undertake additional development. Standard's new producer was No. 2 Harvey which was completed flowing 1,116 bbls. of 36.2-gravity oil and 7 bbls. of water along with 1,500,000 feet of gas per day from the fifth zone at 5,548 feet. This well was carried down to 5,780 feet but was plugged back to the upper part of the zone as a formation test indicated that the lower section of the horizon was wet. The hole was finished with 195 feet of 6⅝-inch liner including 155 feet of perforated and the well brought in flowing through a 1-inch bean. Standard Oil Co. once drilled a deep test in the western extension but set the water string too high and got a water well although the hole also showed some oil. This well, which was considered a conclusive deep test for a long time, retarded deep drilling until St. Helens Petroleum Co. stepped in and completed a deep-zone discovery well in the Miocene on its Monterey lease. During the course of work the company noted a gray sand above the top of the Miocene and later found this zone highly productive. It is the fifth zone that most operators are now developing with satisfactory results although a few wells have been carried down into the Miocene when the Pliocene proved too wet to produce. During the current week, St. Helens Petroleum Co. recompleted No. 25 Monterey, flowing 2,430 bbls. of 36.8-gravity oil and 2,500,000 feet of gas per day after perforating the 6⅝-inch at 5,400-5,540 feet. Present production is cutting around 15 per cent, but may clean up.

Coastal Area

In the Santa Maria Valley field, Signal Oil Co. completed No. 12 Yelkin, in section 26-10-34, pumping 710 bbls. of very clean 15.5-gravity oil per day from 4,955 feet and then hung up its tools as far as this field is concerned. The well, which topped the Monterey at 4,358 feet, was finished with an 8⅝-inch water string cemented at 4,380 feet and 578 feet of 6⅝-inch perforated liner landed on bottom.

In the Capitan field of Santa Barbara County, General Petroleum Corp. has completed No. 23 Erburu in section 32-5-30 pumping 122 bbls. of clean 22.1-gravity oil per day from the Vaqueros at 1,310 feet after fin-

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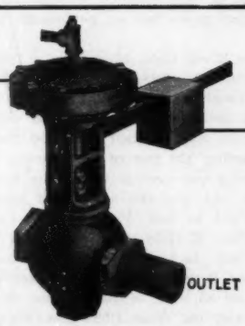

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ishing the hole with 108 feet of 6⅝-inch liner including 75 feet of perforated landed on bottom. In the Sespe district of Ventura County, Condor Oil Co. recompleted No. 1 Dorman pumping 51 bbls. of very clean 26.9-gravity oil per day after deepening the hole to 2,150 feet, and in the Ojao section of Ventura County, St. Louis Oil Co. recompleted No. 4 Pirie pumping 10 bbls. of 19.4-gravity oil daily after plugging the hole back to 1,744 feet.

In the Ventura Avenue field, Lloyd Corp. abandoned No. 1 Lloyd at 7,487 feet after the bit went into a faulted zone and present plans call for the drilling of a second test on this lease which is in the extreme eastern end of the Ventura Avenue anticline. A rig is going up for a second test.

Los Angeles Basin

Two wells were completed in the Lomita section of the Torrance field. Summit Oil Co. recompleted No. 2 Wilson flowing 260 bbls. of relatively clean 26.8-gravity oil per day after deepening the hole to 4,971 feet. Albertson Oil Co. No. 2 Torrance was good for 158 bbls. of 26.7-gravity oil per day upon completion at 5,032 feet as it was brought in flowing through a 34/64-inch bean. This well was finished with 148 feet of 5¾-inch liner including 128 feet of 60-mesh landed on bottom.

In the Long Beach field, Winrock Oil Co. completed No. 1 Encinos pumping 145 bbls. of 22.6-gravity oil cutting 5 per cent from 4,650 feet. This well was finished with 44 feet of 5-inch liner including 22 feet of perforated landed on bottom.

In the West Coyote field, Standard Oil Co. recompleted No. 2 Bastanchury pumping 235 bbls. of 31.4-gravity oil per day from 5,914 feet. This well was carried down to 5,983 feet but was plugged back to the completion depth due to a gray sand in the bottom of the hole. Holly Oil Co. completed an excellent well in the Yorba Linda district this week when No. 1 Harris was brought in pumping 194 bbls. of clean 16.3-gravity oil per day from 1,856 feet. The well is producing from 46 feet of formation and is outstanding because the oil is very clean in contrast with other wells in the area.

San Joaquin Basin

In the North Belridge field of Kern County, Belridge Oil Co., discoverer of production in both the Temblor and Eocene, completed No. 27-6 in section 27-27-20, flowing 410 bbls. of 35.7-gravity oil and 3,640,000 feet of gas per day through a 1½-inch bean from the Wagonwheel zone of Eocene age at 8,400 feet.

The Western Gulf Oil Co. completed another good well in the Fruitvale field early this week when No. 36-B Kern County Land, in section 14-29-27, was brought in flowing 220 bbls. of 18.1-gravity oil daily from 2,981 feet. It was finished with 93 feet of 6⅝-inch liner including 45 feet of perforated landed on bottom.

In the Kern River field, Hast Oil Co. finished No. 2 Kern, in section 34-28-28, pumping 9 bbls. of relatively clean 14.6-gravity oil per day from 390 feet. Top of the oil sand was logged in this well at 260 feet and the hole was finished with 150 feet of 8⅝-inch liner including 120 feet of perforated.

Two new wells were completed in the Mount Poso field this week and thus the amount of work in the field has been cut in half. Vanguard Oil Co. No. 11 Baker, in section 33-27-28, was completed pumping 440 bbls. of clean 16.4-gravity oil daily from 1,808 feet, and Master Petroleum Co. No. 3 Recovery was finished pumping 35 bbls. of 15.8-gravity oil showing a very high water cut from 1,599 feet. Shell Oil Co. No. 3 Olcese-Lilly, in section 21-28-29, at Round Mountain, was good for only 50 bbls. of 14.4-gravity oil per day from 1,626 feet after the hole had been carried down to 1,633 feet and then plugged back.

SHOESTRING TREND

(Continued from Page 34)

as offshore bars bordering a sea, the environment in the sites of their deposition should have been favorable for abundant accumulation of probable oil-forming organisms. It is a well-known fact that the lagoons on the landward side of modern offshore bars and the shallow waters on the seaward side contain abundant life. The constantly shifting sands and tidal inlets and the storms that frequently strike the coasts bring about a high mortality of many types of living forms, both animals and plants. The same waves and currents that destroy the life also grind the plant and animal remains on the beaches and bottoms and carry them into shallow waters and the lagoons, where they form a constantly replenished food supply for the abundant life that exists there. The accumulation of sediment goes on here at a fairly rapid rate, insuring quick burial of the abundant remains of the abundant life. Accordingly, in so far as the shoestring sands of Greenwood and Butler counties are concerned, the few data available appear to indicate that the sand bodies were deposited in an environment that was favorable to the occurrence in abundance of plant and animal organisms whose remains might contribute oil to the local sediments.

"These data indicate that the oil now found in the sand bodies likely originated locally, within a mile or so laterally of its present abode, and within a few feet stratigraphically of the rocks in which it occurs. The data do not indicate that the oil originally was widely disseminated in the Cherokee shale or other formations and later was concentrated in pools by migration laterally through a distance of several miles or vertically through an interval of several hundred feet."

The rapid development of the Eldorado field, which was opened in 1915, was followed by discovery of shoestring sand production in 1917 at what later became known as the Smock-Sluss pool, in central Butler County. The Weaver and Fox-Bush shoestring pools of Butler County also were opened that year, as was the Sallyards pool in section 2-26-8e, Greenwood County. Shoestring development continued in Butler County in 1918, but results in Greenwood County that year were disappointing, some 80 tests out of 186 drilled being dry.

Development Continued

By late 1921, however, the Sallyards field covered an area about 6 miles long, extending from section 25-25-8e to section 20-26-8e, a district now commonly divided into the Blankenship and Sallyards areas. Opening of other fields followed in rapid succession, the Teeter and Agard pools being discovered in 1921, the Seeley, Burkett and Browning fields in 1922. The trend from the Blankenship pool at the southwest to the newly opened Madison pool on the northeast was the scene of the most active drilling campaign in Kansas in 1923. Development of the Polhamus, Thrall, Burkett, Seeley, Wick and Madison pools began that year. The trend, forming an area many miles long but only a mile or less wide and having rich, productive sands, became known as the Golden Lane.

None of the shoestring pools in the region has been exhausted, production in Greenwood County alone remaining consistently at around 9,000 to 10,000 bbls. daily, week after week. Up to January 1, 1938, the Greenwood pools had produced approximately 104,052,000 bbls. of oil, with known reserves estimated at 40,000,000 bbls.

Estimates of Recovery

It is estimated that some of the shoestring pools ultimately will attain a recovery of 7,000 to 10,000 bbls. an acre. One authority has said that 6,000 bbls. of oil an acre is a fair estimate of the ultimate recovery for the 30,000 acres of shoestring sand pools in Greenwood and Butler counties. The sands are found at moderate depths, drilling and development costs are comparatively low, some of the wells have produced more than 1,000 bbls. daily initially, with gravity of the oil around 39 to 42 degrees—a pleasing picture for the oil operator!

What are the possibilities of discovering additional shoestring sand pools in this general area? Some of Mr. Bass' conclusions, based on his study of the region and the findings of other geologists, are interesting and promise much for the future. He says:

"It takes but little optimism to conclude that offshore bars were formed along the ancient shores of the Cherokee Sea for many miles beyond the present known extremities of the shoestring sand trends. It is possible, however, that even though additional offshore bars than those now known were formed, they may not have been preserved.

"Shore features are perishable and it is only under the most favorable conditions that they are not destroyed. The physical conditions under which the shoestring sand bodies were buried are perhaps more difficult to reconstruct than those that made possible the deposition of the sand. But it is known that continuous trends of sand bodies throughout a linear distance of more than 50 miles were preserved. Recent studies of oil-bearing sand bodies in Osage and Kay counties, Oklahoma, 60 to 70 miles south of this area, indicate they were deposited by a similar method, under like environment and at about the same time as the shoestring sands of the Butler-Greenwood region. These facts prove that conditions favorable for the preservation of sand bodies prevailed over a fairly large region in Kansas and Oklahoma and indicate that such environment prevailed elsewhere in the region."

Predict Extensions

He says that the abrupt terminus of the Sallyards and Teeter trends at their southwest ends appears not to be the natural thing to expect. "It is my belief," he continues, "that the Sallyards and Teeter trends will be extended southwestward and the Haverhill trend will be extended southward toward Oklahoma, and it appears probable that they, together with some sand bodies in Osage County, Oklahoma, are parts of a continuous shoreline system. There are extensive areas in Cowley County, Kansas, and Kay County, Oklahoma, that lie between the Burbank, Rainbow Bend, Burden and other shoestring sand oil fields that should be thoroughly prospected for sand bodies that likely were deposited there during the Teeter-Quincy and Sallyards-Lamont stages of the Cherokee Sea."

It is pointed out that sand bodies in the Quincy and Lamont trends commonly occupy small areas and so are difficult to locate. The drilling depths in those sectors are only about 1,500 feet, however, and many tests therefore can be made at no great expense. It thus appears reasonable to conclude, the geologist says, that additional oil and gas pools in shoestring sand bodies will be found in extensions southeastward from the known Quincy and Lamont trends.

"The general scheme of a fluctuating inland sea in eastern Kansas which halted, at least twice, sufficiently long to permit shore features, such as offshore bars, to be built, and coal beds of considerable thickness to accumulate in low lands not far removed, suggests that these phenomena were not necessarily limited to two stages," Mr. Bass continued. "There may have been others. The western shore of the Cherokee Sea likely migrated across northern Butler County, between the eastern gentle slope of the Nemeha granite ridge and the Teeter trend. It is not impossible that at one or more periods the shore remained fixed sufficiently long to permit the waves to throw up a series of offshore bars, which may have been buried by later sediments and preserved.

"Also, theoretically, one might conjecture further that at the period of formation of the shoestring sands, offshore bars probably formed all along the ancient shores on the west and east sides of the Cherokee Sea in Kansas, and that they therefore should be found swinging northward around the old land barrier that extended eastward across Woodson and Allen counties, thence trending northwestward through Franklin and Osage counties, northward through eastern Wabaunsee County, thence northeastward through Shawnee, Jackson and Nemeha counties, possibly into Nebraska."

Rocky Mountain Area

By T. R. INGRAM

Another Nebraska Deep Test; Lance Creek Disappointment

DENVER, Colo., June 20.—If sufficient gas to cook "hot dogs" to be sold to spectators constitutes a "commercial" well, then Pueblo County, Colorado, has its first commercial gas well.

Hewitt Brothers and Manning No. 1 Pecklow, on southwestern side of Lance Creek, Wyoming, is shut down for orders in the Leo sand and apparently marks the edge of the deep pay in that direction. One shale well in east Salt Creek was abandoned and one new operation was reported in the Warm Springs field in Hot Springs County.

The California Co. will drill a shallow test on the Depuyer structure in Teton County, Montana. There was one new operation and no completions in Cut Bank. The government will sell leases on 2,610 acres in the Kevin-Sunburst field. There were two completions and two new operations in the last named area.

The Felmont Oil Co., of Texas, will drill a deep test on the Sanford structure in the Nebraska Panhandle.

NEW MEXICO

The Vacuum pool in Lea County, southeastern New Mexico, was extended about 2 miles to the northeast at Phillips Petroleum Co. No. 6 Santa Fe, C SW SE section 21-17-35, and a 4-mile extension to the northwest was indicated at Repollo Oil Co. No. 1-197 State, SE cor. section 6-17-34.

The No. 6 Santa Fe swabbed and flowed at the rate of 24 bbls. of oil an hour for six hours after retreating with 5,000 gallons of acid. It was bottomed at 4,578 feet. After first acid treatment it flowed 40 bbls. of oil in 15 minutes and went dead. It was not a completion.

The Repollo extensioner was acidized, the swab was run three times and 30 bbls. of oil were recovered, when swab was lost. Operators were attempting to recover the swab. It was bottomed at 5,016 feet, water intruded and it was plugged back to 4,680 feet.

Southeast New Mexico completions of the week were confined to Lea County, as follows:

Magnolia Petroleum Co. No. 7 State-Bridges, C SW NE section 23-17-34, Vacuum area, topped pay at 4,545 feet, total depth 4,700 feet in lime, and flowed 557 bbls. of oil in 15 hours through choke on tubing.

Same company's No. 8 State-Bridges, C NW SE section 23-17-34, Vacuum pool, flowed 159 bbls. of oil in 17 hours through tubing choke from pay topped at 4,566 feet, total depth 4,740 feet.

The third Vacuum completion of the week was at Phillips Petroleum Co. No. 5 Santa Fe, C NW SW section 31-17-35. It had pay at 4,385 feet, total depth 4,652 feet, and flowed 264 bbls. of oil in eight hours, naturally. Gas gauged 486,000 feet.

Skelly Oil Co. No. 1-L State, C SW NW section 2-25-37, topped pay at 3,367 feet, total depth 3,423 feet, and flowed 156 bbls. of oil daily through tubing, accompanied by 2,500,000 feet of gas. Flow was natural.

Amerada Petroleum Corp. No. 1 James Stuart, C W half SW NW section 14-25-37, Langlie area, had initial daily production of 156 bbls. of oil from pay topped at 3,385 feet, total depth 3,427 feet.

Atlantic Refining Co. No. 1 State-24, C SE SW section 32-24-37, found pay at 3,478 feet, was bottomed at 3,546 feet, and flowed 235 bbls. of oil in 24 hours through tubing.

Culbertson & Irwin No. 4 Alston, SW SE NW section 26-25-37, topped pay at 3,240 feet, total depth 3,341 feet, and flowed 4 bbls. of oil daily.

Humble Oil & Refining Co. No. 3-H State, C NW NW section 34-22-37, flowed 52 bbls. of oil in four hours through three-fourths inch choke on tubing. Pay was topped at 3,590 feet, and it was bottomed at 3,664 feet in lime.

Texas Pacific Coal & Oil Co. No. 12-A State, C NE SE section 7-22-36, South Eunice field, found pay at 3,826 feet, total depth 3,850 feet, was acidized and flowed 110 bbls. of oil an hour, with 1,000,000 feet of gas. Flow was through 2-inch tubing.

Two States Oil Co. No. 2-B Cole, C NW NW section 16-22-37, had pay at 3,602 feet, total depth 3,694 feet in lime, and flowed 276 bbls. of oil daily through tubing choke. Gas gauged 270,000 feet. It is in the Penrose area.

Lea County

Addison Oil Co. No. 2 Knight, C SW NW sec. 27-24-37. T.D. 3,203 ft.
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,855 ft.; set 8-in. 2,573 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,420 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-25-37. Drlg. 3,610 ft.
Anderson-Prichard Oil Corp. No. 2 Wells, C SW SE sec. 5-25-37. Drlg. 1,465 ft.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Continental Oil Co. No. 3 Jack, C SE NE sec. 20-24-37 Drlg. 3,373 ft.
Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat; T.D. 4,352 ft.; S.D.O.
Continental Oil Co. No. 1 State K-29, C SW SW sec. 29-16-37. Drlg. 1,450 ft.
Continental Oil Co. No. 4-E-17 State, C SW NW sec. 17-22-36. T.D. 3,880 ft.; P.B. 3,850 ft.; S.D.O.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 1 Dabbs, NE NE NW sec. 35-25-37. T.D. 3,284 ft.; rng. csg.
Culbertson & Irwin No. 1 Henry, C N½ NW SW sec. 26-25-37. Drlg. 1,420 ft.
Culbertson & Irwin No. 3 Liberty, C N½ NW SW sec. 3-25-37. Drlg. 3,070 ft.
A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. T.D. 3,373 ft.; flwd. 15 B.O.P.H. at 3,321 ft.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.
Great Western Prod. Co. No. 1-C State, C NE SW sec. 7-19-37. T.D. 3,828 ft.; drlg. plug.
Gulf Oil Corp. No. 1 Alley, C NE SE sec. 10-23-37. T.D. 3,713 ft.; P.B. 3,688 ft.; S.D.O.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.
Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. T.D. 4,155 ft.; P.B. 4,100 ft.; R.U.S.T. to C.O.
Gulf Oil Corp. No. 3 Ramsey, C SW SE sec. 35-21-36. Drlg.
Gulf Oil Corp. No. 4 Stuart, C NW NE sec. 10-25-37. Drlg.
Humble O. & R. Co. No. 6 Fopeano, C NE NE sec. 35-20-36. Drlg.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.
Magnolia Pet. Co. No. 2 Brunson-Argo, C NE NE sec. 9-22-37. Drlg. 1,240 ft.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 3-K State, C SE SE sec. 31-17-35. Drlg. 4,630 ft.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flwd. 51 B.O. in 1 hr. naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NE NW sec. 26-17-34. Drlg. 2,220 ft.
Magnolia Pet. Co. No. 6 State-Bridges, C SW NW sec. 23-17-34. T.D. 4,755 ft.; pay 4,618 ft.; shot; C.O.
Magnolia Pet. Co. No. 9 State-Bridges, C SE SW sec. 13-17-34. Drlg. 2,868 ft.
Magnolia Pet. Co. No. 10 State-Bridges, C SE NW sec. 25-17-34. T.D. 824 ft.; W.O.C.
Magnolia Pet. Co. No. 11 State-Bridges, C SE NW sec. 25-17-34. T.D. 820 ft.; W.O.C.
Maljamar O. & G. Co. No. 9 Baish, C NW NW sec. 21-17-32. Drlg. 3,835 ft.
Maljamar O. & G. Co. No. 10 Baish, C SW NW sec. 22-17-32. Drlg. 2,720 ft.
Maljamar O. & G. Co. No. 4 Mitchell, C NE NE sec. 20-17-32. T.D. 3,830 ft.; S.D.R.
Maljamar O. & G. Co. No. 5 Mitchell, C NW NW sec. 19-17-32. Drlg. 3,080 ft.
Jas A. Mascho No. 2 Cloyd, C SW SW sec. 20-22-33. Loc.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.O.
Mid-Continent Pet. Corp. No. 3 Marshall, SW SW SW sec. 12-21-36. T.D. 265 ft.; W.O.C.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,710 ft.
Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,625 ft.
Ohio Oil Co. No. 1 State-Fleming, NE cor. sec. 2-26-37. T.D. 3,331 ft.; T. pay 3,268 ft.; C.O. at 3,300 ft.
Ohio Oil Co. No. 1 State-McCallister, C SE SW sec. 25-17-34. Drlg. 3,237 ft.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Parker Drlg. Co. No. 2 Irwin, C W½ NW SW sec. 35-24s-37. Drlg. 2,930 ft.
Paton Bros. No. 2 Wilkinson, C SE SE sec. 8-18-31. Loc.
Penrose & Rowan No. 1 Christmas, SE cor. sec. 28-22-37. T.D. 858 ft.; S.D.R.
Lem Peters No. 1 L. J. May, C NW SE sec. 27-22-37. T.D. 3,639 ft.; shot & F. 706 B.O. in 24 hrs.; now tstg.
Lem Peters No. 1 T. O. May, C NW NE sec. 34-22s-37. Drlg. 3,405 ft.
Phillips Pet. Co. No. 3 Santa Fe, C SW NW sec. 5-18-35. C.&P.
Phillips Pet. Co. No. 4 Santa Fe, C SW SE sec. 31-17-35. T.D. 4,662 ft.; treated & F. 11 B.O.P.D.; retreated & F. 37 B.O.P.D.
Phillips Pet. Co. No. 6 Santa Fe, C SW SE sec. 21-17-35. T.D. 4,578 ft.; treated & F. & swb. 424 B.O. in 24 hrs.
Phillips Pet. Co. No. 7 Santa Fe, C SE SW sec. 27-17-35. T.D. 825 ft.; W.O.C.
Phillips & Pure No. 2 Woolworth, C NE SE sec. 33-24-37. Drlg. 2,210 ft.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Repollo Oil Co. No. 2 Hair, NW SW NW sec. 9-24-37. Drlg. 3,115 ft.
Repollo Oil Co. No. 1 State, SE cor. sec. 6-17-34. T.D. 5,016 ft.; P.B. 4,690 ft.; swb. 30 B.O. and lost swb.; now fsg.
Repollo Oil Co. No. 2 Turner, SW NE SW sec. 29-21-37. R.U.S.T.
Repollo Oil Co. No. 5-B Whitten, NW NW NE sec. 4-24-36. T.D. 3,540 ft.; rng. csg.
Republic Prod. Co. No. 1 State, C NW SW sec. 32-17-35. Drlg. 3,733 ft.
Republic Prod. Co. No. 2 State, C SW SW sec. 32-17-35. Loc.
Rowan & Nichols No. 1 State, C NE NW sec. 22-10-37. Drlg. 3,104 ft.
J. M. Rush No. 2 State, NW NW SE sec. 20-20-37. Loc.
J. M. Rush No. 2 Wantz, C NW SW sec. 21-21-37. Drlg. 2,825 ft.
Harry J. Schafer No. 1-A State, C E½ NW NE sec. 26-20-36. T.D. 3,865 ft.; swb. some oil; P.B. 3,845 ft.; still tstg.
Shasta Oil Co. No. 2 Woolworth, NE NW NW sec. 28-24-37. T.D. 3,155 ft.; fsg.; est. 3,000,000 ft. gas.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.
Shell Pet. Corp. No. 2-C State, NE SE NE sec. 24-21-35 Drlg. 2,673 ft.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.
Skelly Oil Co. No. 7 Coats, C NW SW sec. 3-24-36. T.D. 1,322 ft.; drlg. plug.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.
Stanolind O. & G. Co. No. 3-B Farnsworth, C E½ NE SW sec. 7-26-37. Drlg. 2,457 ft.
Stanolind O. & G. Co. No. 3-A Hill, SE SE NW sec. 6-21-37. T.D. 1,392 ft.; W.O.C.
Stanolind O. & G. Co. No. 5-B Myers, C NE SW sec. 9-24-37. T.D. 3,530 ft.; est. 16,000,000 ft. gas; treated; now swabbing to test.
Stanolind Oil Co. of Texas No. 1 State, C SW NW sec. 32-17-35. Drlg. 1,274 ft.
W. H. Street No. 2 Farrell, C NW SE sec. 22-22s-37. Drlg. 3,380 ft.
Texas Co. No. 3 Black, C NW NE sec. 21-24-37. Drlg. 3,350 ft.
Texas Co. No. 2 Cagle, SE NE NE sec. 9-26s-37. Loc.
Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. T.D. 5,117 gt.; P.B. 4,259 ft.; shot; C.O.
Texas Co. No. 4 Fristoe, NW NE SE sec. 3-25-37. T.D. 3,480 ft.
Texas Co. No. 3 J. S. Lea, SW NE SW sec. 14-20-34. Drlg. 224 ft.
Texas Co. No. 1-N State, C SW SW sec. 30-17-35. C.O. to 4,747 ft.; P.B. 4,700 ft.; S.D.O.
Texas Co. No. 2-D State, C SW NW sec. 27-17-34. Drlg. wtr. well; drlg. 2,855 ft.
Texas Co. No. 1-P State, C NW SE sec. 7-18-35. Drlg. 4,859 ft.
Texas Co. No. 1-Q State, C SE SE sec. 25-17-34. T.D. 1,606 ft.; rng. csg.
Texas Co. No. 2-Q State, C SW SE sec. 25-17-34. Drlg. 3,680 ft.
Twin Drlg. Co. No. 1 Corrigan, C SW NE sec. 4-22-37. Drlg. 1,275 ft.
Twin Drlg. Co. No. 1 State, C SE NW sec. 32-21-37. T.D. 3,784 ft.; testing.
Two States Oil Co. No. 1-B Cole, O.W.D.D., C NE NE sec. 16-22-37. O.T.D. 1,141 ft.; drlg. 3,393 ft.
Two States Oil Co. No. 1 Hill, C SW SW sec. 31-20-38. T.D. 253 ft.; W.O.C.
Weier Drlg. Co. et al No. 1 Woolworth, NE NE SW sec. 28-24-17. Drlg. 2,975 ft.; est. 4,000,000 ft. gas.
Sam Weiner No. 1 Smith, NE cor. sec. 4-25-37. T.D. 3,055 ft.; blew out; est. 20,000,000 ft. gas.
Weiner No. 1 Parcell, C SW NE sec. 8-23-28. Drlg. 4,433 ft.; S.O.
V. P. Welch No. 1 Lewis, SE SW SE sec. 5-16-28. Drlg. 575 ft.
Western Drlg. & Eng. No. 2-A Western, SE SE NW sec. 23-17-29. Loc.
Western Gas Co. No. 1 Matkins, C SE SE sec. 15-23-36. T.D. 3,665 ft.; P.B. 3,658 ft.; tested 7,000,000 ft. gas and S.S.O.; to D.D.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-37. T.D. 2,410 ft.; S.D.O.

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Danciger O. & R. Co. No. 4-A Turner, C SW SW sec. 18-17-31. T.D. 3,522 ft.; S.I.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE sec. 17-17-31. Loc.
D. & B. Oil Co. No. 3 Jenkins, NE NE NW sec. 20-17-30. Drlg. 3,110 ft.
English & Harman No. 1 Dougherty, NE NE SW sec. 3-17-27. T.D. 1,050 ft.; fsg.
Etz Bros. No. 5 State, SE NE SE sec. 16-17-30. Loc.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. T.D. 2,770 ft.; S.D.O.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. T.D. 3,474 ft.; flowed 150 B.O. est. through casing.
F. W. & Y. Oil Co. No. 9-A Gissler, C SE NE sec. 14-17-30. T.D. 3,500 ft.; treated and swb. 40 B.O.P.D.; S.D.O.
F. W. & Y. Oil Co. No 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. T.D. 3,588 ft.; to test.
Grayburg Oil Co. No. 12 Burch, NW NW SE sec. 19-17-30. R.U. and S.D.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. T.D. 2,085 ft.; S.D.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 1,980 ft.; S.D.O.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. Drlg. 1,850 ft.
F. G. Keyes No. 2 State, C SE NE sec. 9-17-28. Rng. csg. at 55 ft.
Paul Moran No. 1 Crawford & Smith, NW NW SW sec. 24-24-36. T.D. 2,005 ft.; S.D.O.
Nash, Windfohr & Brown No. 5-A Stevens, C SE SW sec. 13-17-30. Loc.
Paton Bros. No. 2 Ginsberg, C SE SE sec. 8-18-31. Drlg. 3,167 ft.; S.O.
Premier Pet. Co. No. 1-B Maddren, NW SW SW sec. 27-17-30. Drlg. 2,460 ft.
Repollo Oil Co. No. 3-A Keel, SW SE SW sec. 7-17-31. Drlg. 3,510 ft.; flowed 180 B.O. in 18 hrs.
Repollo Oil Co. No. 3-C McIntyre, NW SE NE sec. 20-17-30. Drlg. 2,605 ft.; S.O. at 2,540 ft.
Repollo Oil Co. No. 3-A Parke, NW cor. sec. 22-17-30. T.D. 3,345 ft.; flowed 150 B.O.; rng. tbg.
Repollo Oil Co. No. 4-A Parke, NW SE NW sec. 22-17-30. Drlg. 2,860 ft.
Rudco O. & G. Co. No. 5 Yates, C NE NW sec. 33-18-28. Drlg. 1,110 ft.
Paul Sarget No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
W. A. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. T.D. 3,330 ft.; S.D.O.

Chaves County

E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. Drlg. 1,875 ft.
E. J. Fisher No. 1 Foster, C NW NW sec. 7-15-26. R.U.R.
Grastorf & Caudill No. 1 Smith, C NE NE sec. 1-4s-29. Wildcat; new hole; drlg. 3,150 ft.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. sec. 15-15-30. T.D. 595 ft.; fsg.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-28. T.D. 1,000 ft.; S.D.O.

Colfax County

Winston Marks No. 1 State, SE NW sec. 5-25-24. S.D. for pipe at 1,100 ft.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W.; prep. to deepen from 5,850 ft.; S.D.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 25 ft.; S.D.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. T.D. 3,702 ft.; S.D.O.
Fred Turner, Jr., No. 1 H. V. Everett, SE SE sec. 28-22-13. S.D. 3,710 ft.

Quay County

H. M. McGee No. 1 Chapman, sec. 9-9-35e. Drlg. 1,000 ft.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. Drlg. 980 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 10-11n-4e. T.D. 3,750 ft.; M.I. 6⅝-in. and 3-in. D.P.; to resume.

San Juan County

Continental Oil Co. No. 76 Rattlesnake, SW NE SE sec. 2-29n-19w. Drlg. 475 ft.
Al Greer No. 2 fee, SW SE SW sec. 10-30-11w. S.D. 660 ft. for 10-in.
Frank Lischke No. 1 Abreo, SW SW sec. 27-30n-11w. T.D. 1,460 ft.; tstg. S.O.
Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. Drlg. 1,900 ft.

Socorro County

Central New Mexico Oil Co. No. 1 Belen Gr., SE NW sec. 16-3n-1e. T.D. 2,965 ft.; (C.D.); C.O.

Torrance County

Chief O. & G. Co. No. 1 Pace, SE sec. 12-6n-7e. Drlg. 2,045 ft.; carrying 5½-in. at 2,017 ft.; S. carbon diox. and G. at 2,022-27 and 2,036-42 ft.; est. 500,000 ft.
Woolston Bros. No. 1 Garland, NE SE NE sec. 32-7n-7e. R.U. (first report).
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE sec. 32-7n-7e. Drlg. 900 ft.; 10¾-in. at 431 ft.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW sec. 23-7n-1e. R.U.R.
C. A. Grober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. T.D. 909 ft.; R.U.R.

COLORADO

Archuleta County

Regarding a report in this column two weeks ago concerning a show of oil in the Pagosa Oil & Development Co. No. 1 Macht, which said: "The statement that there are no surface evidences of structure, is almost unanimous," Arthur C. Fisher, attorney, of Los Angeles, takes issue. He states: "The structure in question was examined by competent geologists and mapped before exploration was undertaken. I have personally been on the ground and examined the evidences of structure surrounding the drill site, and, while not a geologist, have specialized in the presentation of geological evidence in litigation."

Boone Dev. Co. No. 1 Newton, SE NW SE sec. 18-33n-1e. Drlg. 200 ft.
Pagosa Oil & Dev. Co. No. 1 Macht, C sec. 32-36n-1w. Drlg. below 1,135 ft.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE sec. 2-19s-70w. Drlg. 280 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE sec. 36-7s-88w. Drlg. 1,000 ft. after lowering 8¼-in. from 721 ft. for better csg. seat; S.O.&G. in sh.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. S.D. 3,920 ft.; will D.D. to Morrison.

Huerfano County

S. W. Pressey reports that his No. 1 Ojo, SW NE section 10-29s-69w, Oak View district, has been shut in as a gas well at 3,685 feet, total depth. Volume of gas or identification of horizon was not stated. The well was started in 1933 and is a little more than one-fourth of a mile southwest of a well drilled in 1926 in the NE SW section 10 by the Panuco Exploration Co. which was reported completed at 3,462 feet, probably in the Dakota, for 8,000,000 feet of gas per day. In 1933 this well was reported making less than 1,000,000 feet. Pressey states that new well will be shut in until sufficient gas is developed to build a gasoline plant.

J. G. Tomkins & Sons No. 1 Tomkins, NE NE NE sec. 10-29s-69w. T.D. 370 ft.; will set csg. and test S.G.
S. W. Pressey No. 2 Alamo, C SW SE sec. 3-27s-68w. Drlg. 1,275 ft.; set 8¼-in. at 1,250 ft.; S.G. not com'l.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW sec. 31-33n-9w. Drlg. below 400 ft.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. Drlg. 3,306 ft.

Moffat County

Morapas Pet. Corp. No. 1 Coles, SW SW SE sec. 1-3n-92w. T.D. 2,690 ft.; C.O. to bttm.; will cmt. caves.
C. R. Privett No. 1 Sutton, NE NE SW sec. 1-5n-96w. T.D. 300 ft.; cmtg. 12½-in.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW sec. 31-36n-17w. S.D. 4,445 ft. for repairs; S.O. and G. at 4,300 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. 5,815 ft.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW sec. 31-21s-44w. Drlg. 3,715 ft.

Pueblo County

What constitutes a "commercial" well has long been a moot question, but drillers on C. E. Puckett No. 1 Barber, in the Boggs Flat district, have a way of answering it to their own satisfaction. The well had a show of gas in shale at 475 feet. A 4-inch pipe was mudded into the casing, on which they connected up a 1-inch pipe running 40 feet up into the air. Through this pipe the gas produced a flame 6 to 8 feet high. When the visitors were numerous enough to warrant it, the outlet pipe was detached, an iron plate was put over the 4-inch and hot dogs were toasted and sold to the crowd. Thus the press associations had some basis for their report that Pueblo County had its first "commercial" gas well. The show is above the objective Dakota.

Eden O. & G. Co. No. 1 Horse Creek, SW SE sec. 29-19s-64w. Some mat. on loc.
C. E. Puckett No. 1 Barber, NW sec. 35-21s-66w. S.D. 475 ft.

Routt County

Craig & Moore No. 1 Erwin, C SW NE sec. 33-7s-85w. Drlg. 910 ft.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW sec. 16-1n-91w. Drlg. 2,245 ft. in blk. sh.

WYOMING

Albany County

Murphy Oil Co. No. 12 Holst, SE NW NE sec. 13-17n-77w. Drlg. gr. sh. 2,880 ft.
Murphy Oil Co. No. 13 Holst, SE SW NE sec. 13-17n-77w. Loc.

Big Horn County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 15-1n-93w. Drlg. 536 ft.
Clifford S. Johnson No. 1 Johnson, CEL NW NW sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE sec. 32-55n-97w. T.D. 2,420 ft.; lowering csg. for W.S.O.

Carbon County

Cunningham Oil Co., Inc., No. 1 Union Pacific-Cronberg, SE NE SE sec. 3-23n-79w. Drlg. 1,985 ft.
Producers Oil Co. No. 1 Lake Valley, 200 ft. S of CNL sec. 14-20n-88w. Res. drlg. 1,755 ft.; 12½-in. at 1,588 ft.
Ohio Oil Co. No. 3 Hazlett Est., NE SW SE sec. 34-23n-79w. Drlg. r.b. 3,313 ft.
Ohio Oil Co.-California Co. No. 3 State-Griffin, C SW NW sec. 36-21n-79w. Drlg. 5,468 ft.; Muddy sd. 5,226-93 ft.

Converse County

Wyshawn Oil Co. No. 2 Lindley, C SW SW sec. 35-32n-69w. Drlg. 300 ft.
Sand Creek Oil Co. No. 1 Probesh, NW SW SE sec. 29-32n-69w. T.D. 565 ft.; lowering 8¼-in. for W.S.O.
Fred Bunker No. 1 Pestal, SE NE NE sec. 32-32n-69w. Drlg. 200 ft.; 10-in. at 170 ft.
New Era Fuel Co. No. 2 Mary Gasper, CNL NW SW sec. 25-32n-69w. Drlg. 400 ft.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE sec. 34-32n-69w. Drlg. 1,425 ft.

Fremont County

Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. Drlg. 3,360 ft.
Consolidated Oil Properties No. 3 Ewart, C SW SE sec. 16-1n-1w. Drlg. below 820 ft.
Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33-92w. T.D. 5,320 ft.; cmtd. 5⅜-in. at 5,319 ft.; W.O. perf.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. S.D. 2,245 ft. for 7-in.

Hot Springs County

D. D. Gibson No. 26 fee, SW NW SE sec. 35-43n-93w. Spdg. 90 ft. (Warm Springs dist., first report).
California Expln. Co. No. 1 Govt., NE SE NE sec. 12-44n-97w. T.D. 4,070 ft.; set whipstock to drl. out of 8⅝-in.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW sec. 23-21n-117w. Drlg. 500 ft.

Natrona County

Western Producers, Inc. No. 1 Government, NW SW SE section 5-39n-78w, drilled on the east side of Salt Creek for shale production, was abandoned at 1,165 feet.

Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE SW sec. 26-40n-79w. Drlg. 1,935 ft.
Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78w. S.D. 1,165 ft.
Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW sec. 35-40n-79w. Loc.; W.O. compl. No. 26.
Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE NW sec. 35-40n-79w. T.D. 4,002 ft.; cmtd. 6⅝-in. at 3,996 ft.; tstg.
General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. T.D. 8,019 ft.; cmtd. 6⅝-in. at 7,978 ft.; tstg.

Niobrara County

Hewitt Brothers and J. E. Manning No. 1 Pecklow, SE cor. section 1-35n-66w, an outpost well on the southwest of Lance Creek, topped the Leo sand at 5,635 feet and had about 4 feet of saturation followed by water and is shut down for orders at 5,677 feet. In a drill stem test open for 1 hour and 15 minutes, it showed 22 bbls. of fluid, of which 75 per cent was water. It apparently marks the limits of the Minnelusa pay in that direction. Location is about one-fourth of a mile west and north of C. L. Price No. 1 Lamb, a good producer in the Leo sand. Elevation is 4,473 feet. It is apparent that the well was running low by about 217 feet when it hit the red marker at 5,548 feet. The next important development probably will be in Price No. 2 Lamb, a mile out from the nearest producer and also a mile to the south and half a mile west of No. 1 Pecklow. Drilling depths on this well are being withheld.

C. L. Price No. 2 Lamb, C SE SW sec. 12-35n-65w. Drlg. below 2,700 ft.
Minnelusa Oil Co. No. 2 H. & M., NW NE NE sec. 8-35n-65w. Cg. 4,000 ft.
Hewitt Bros. and Manning No. 1 Pecklow, SE SE SE sec. 1-35n-66w. S.D.O. 5,677 ft.
H. D. Moore et al No. 1 Beregren, NW sec. 23-35n-63w. Drlg. in Sundance 937 ft.; top Morrison 587 ft.
Continental Oil Co. No. 4 Apex-2, NW NE SE sec. 34-36n-65w. Cg. 3,950 ft.

Park County

Resolute Oil Co. No. 2 State, C SW SW sec. 16-57n-101w. Drlg. 2,545 ft.
Paul Stock No. 1 Govt., SE SE NE sec. 20-53n-101w. Drlg. 3,850 ft.

Sublet County

Texas Co. No. 3-H, NE NW NW sec. 27-27n-113w. Drlg. 523 ft.
Yellowstone Oil Co. No. 1 Henry Budd, C SE SE sec. 6-30n-112w. Drlg. 100 ft.
Wyo. Pet. Corp. No. 1 Chas. Budd, C NE NE sec. 10-29n-113w. S.D. 250 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE sec. 21-28n-113w. Drlg. 800 ft.

Sweetwater County

Sinclair-Wyoming Oil Co. No. 33-A, SE SW SW sec. 11-26n-90w. Cg. 2,147 ft. in sat. Sundance sd.; top 2,129 ft.

Washakie County

Wyoming O. & R. Co. No. 10-B Brome, C SE NE sec. 6-47n-90w. Drlg. 1,620 ft.; top Frontier 1,320 ft.

Weston County

Gose Oil Syndicate No. 1, NE NE NE sec. 28-47n-63w. C.O. after landing 4¾-in. at 4,900 ft.
Osage Trust Co. No. 1, SE NW NE sec. 22-46n-64w. Set 500 ft. csg. through Lakota and res. to go to the Sundance.
Howland & Seneker, NE NW SW sec. 13-46n-64w. Rng. 8¼-in. through Greenhorn.
West Osage Oil Co. No. 3, SW SE NE sec. 15-46n-64w. W.O. csg.
Updike Bros. No. 6, CSL NE SW sec. 25-46n-64w. Cmtd. 8¼-in. through Greenhorn; W.O.C.
John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. T.D. 2,080 ft.; W.O. csg.

MONTANA

Carbon County

The Henderson Producing Co. No. 1-H-11 Elk 11, joint with the Continental Oil Co., in the Elk Basin field, which shut down last fall at 1,626 feet, in the Upper Frontier, found 600 feet of oil in the hole when preparations were begun to resume drilling.

Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW sec. 35-9s-23e. T.D. 1,626 ft.; prep. to res.
R. C. Tarrant No. 1, 500 ft. W of C sec. 3-6s-18e. T.D. 2,205 ft.; drlg. through fault; probably abd. and drill another.
R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-19e. S.D. 1,780 ft.; chg. to rot.
Sha-Wa Pet. Co. No. 1 Govt., SW NW NE sec. 35-9s-23e. T.D. 3,124 ft.; perf. csg. at 2,985 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. Drlg. 2,391 ft.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE sec. 5-14n-55w. Drlg. 1,040 ft.

Fallon County

Montana-Dakota Utilities Co. No. 1, SW NE NE sec. 5-6n-60e. T.D. 105 ft.; cmtd. 10¾-in. at 102 ft.; W.O.C.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 810 ft.

Glacier County

Glacier Prod. Co. No. 1 Thomas Unit, 1,980 ft. from S line, 2,640 ft. from W line, sec. 14-35n-5w. Spdg. (first report).
Glacier Prod. Co. No. 3 Bonnet, CSL NW SW sec. 4-32n-5w. Drlg. 500 ft.
Texas Co. No. 9, Unit 6, C NW NW sec. 9-32n-5w. Drlg. 1,390 ft.; Colo. 650 ft.; 10¾-in. at 682 ft.
Glacier Prod. Co. No. 4 Coburn, NW SE SW sec. 5-33n-5w. Drlg. 1,690 ft.
A. B. Cobb No. 1 Reagan-Jackson, SW SE NW sec. 5-32n-5w. Drlg. 2,240 ft.
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE sec. 17-33-5w. T.D. 2,820 ft.; cmtd. cave, 100 sacks.

Petroleum County

O. B. Canfield No. 2 Govt., SE NE NE sec. 21-17n-24e. T.D. 755 ft.; C.O. at 600 ft.

Pondera County

Jones-Chambers No. 1 Erickson, SW SE SW sec. 3-27n-4w. Res.; R.U.

Stillwater County

Indian Terr. Ill. Oil Co. No. 2 Hepp, NW NW NW sec. 25-1n-21e. Drlg. 4,111 ft. in 6-in. hole.

Teton County

The California Co. is preparing to drill a shallow test well on the Dupuyer structure, west of Pendroy. Location has not yet been released pending final check by the geological department. The structure is a wildcat located in Townships 26n and 27n, Range 9w. It will go to approximately 2,500 feet, with the Madison expected at around 1,300 to 1,500 feet. Seven years ago this company drilled a test in the Bynum-Pendroy district in section 34-27n-7w, about 12 miles to the east. Still farther to the east in the Pendroy district, several wells have been drilled, some of which had good shows of oil. These wells were west of the Pondera field.

The Dupuyer structure is about 20 miles west of the Devonian test getting under way in the Gulf State Oil Co. well.

Gulf State Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW sec. 5-27n-5w. Spdg.

Toole County

Thirteen tracts comprising 2,610 acres scattered through the Kevin-Sunburst district will be offered for lease to the highest bidder by the department of the interior at the Great Falls land office on July 11. Some of the land has been drilled in the past and production was encountered on it. Later the wells went to water. Other land had good shows of oil. Some of it represents acreage formerly held under prospecting permits. Most of the acreage was acquired in the old days before acidization turned shows of oil into commercial wells.

There were two completions and two new operations in Kevin-Sunburst. Hamilton & Hamilton No. 4 Reeg, SE SW SE section 14-35n-2w, which had a show of oil in the contact at 1,443-75 feet, is pumping 10 bbls. per day after acidizing with 500 gallons. It showed no water. Kluth & Burke No. 1 George, SE SW SE section 8-34n-2w, is pumping 4 bbls. per day from sand at 1,433-53 feet after acidizing with 1,000 gallons.

Chab Oil Co. No. 2 Govt., NW NE NW sec. 12-35n-3w. Spdg. (first report).

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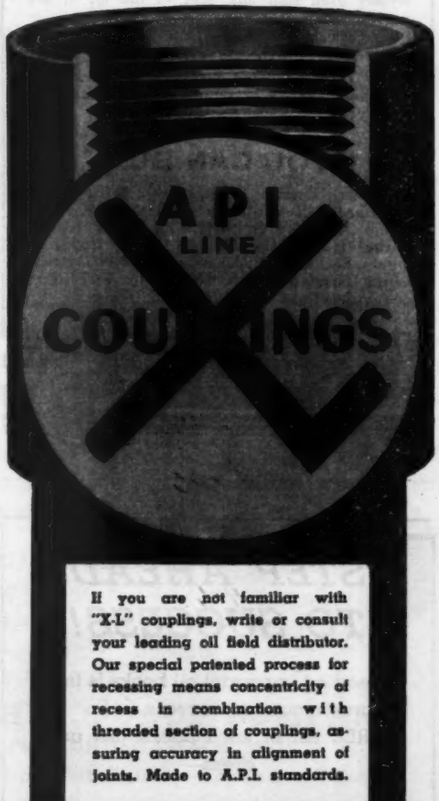

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A. E. Crumley & Son No. 13 Fryberger, CNL NW SE sec. 24-35n-3w. Drlg. 450 ft. (first report).
Big West Oil Co. No. 2 Engle, SE SW SW sec. 1-35n-3w. Drlg. 1,500 ft.
Henry Vander Pas No. 2 Ward, SE SW NW sec. 28-35n-3w. T.D. 1,575 ft.; rng. 7-in.
G. H. Lund No. 1 Dahlen, C SE NW sec. 35-35n-4w. T.D. 1,950 ft.; cmtd. 7-in.; W.O.C.
Montana Gas Corp. No. 2 Clark, C SE SW sec. 24-37n-1w. T.D. 2,430 ft. in Madison; drlg. up tbg.; W. sd. 2,400-21 ft.
Casper T. Olen No. 8 Engermoen, SW NE SW sec. 11-35n-2w. T.D. 1,555 ft.; cmtd. 7-in.; W.O.C.
Agen Oil Co. No. 1 Goeddertz, SE SW SW sec. 23-35n-3w. T.D. 1,724 ft.; contact 1,722 ft.; acid. 1,000 gals.; tstg.
V. F. Dahl No. 1 Kimball, SW SE SE sec. 1-35n-3w. T.D. 1,486 ft.; cmtd. 7-in.; W.O.C.
Big West Oil Co. No. 8 Gunderson, CNL NE NW sec. 19-35n-2w. T.D. 1,595 ft.; contact 1,590 ft.; acid. 1,000 gals.; tstg.
O. A. Nepstad No. 2 Haugen, NW NW NE sec. 11-35n-3w. S.D. 1,600 ft.

UTAH

Daggett County

Mountain Fuel Supply Co. No. 3-B Murphy, NW NW SW sec. 23-3n-24e. T.D. 6,035 ft. in Dakota sd.; prep. to run csg. and test; D.S. test at 5,930 ft. showed 12,500,000 ft. gas.

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. T.D. 1,600 ft.; rng. 10-in. to 1,397 ft.

Summit County

Mountain Fuel Supply Co. No. 1 Wilde, NE SE SE sec. 9-2n-5e. Drlg. 330 ft.
Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. T.D. 2,876 ft.; fsg.; H.F.W.

NEBRASKA

Keith County

Twentieth Century Oil Co. No. 1 Stuken, C NW NW sec. 21-14n-37w. Drlg. sh. 1,200 ft.

Sioux County

The Felmont Oil Corp. (DeGolyer and others) of Dallas, has let contract for a deep test to be drilled on the Sanford structure in the Nebraska Panhandle. Location is not yet available, but probably will be in section 22-27n-55w. This is approximately 6 miles south of the test being drilled on the Agate Springs structure by the Union Oil Co. of California. Geophysical Service, Inc., of Dallas, made a detailed seismograph survey of the Sanford structure last fall for the Felmont company. The Amerada Petroleum Corp. has considerable acreage to the west of the two structures and the Texas Co. and the California Co. have some acreage.

Union Oil Co. of Calif. No. 1 Agate-15, NW SE SE sec. 15-28n-55w. Reported cg. in Sundance at 6,080 ft.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96w. Drlg. 8,350 ft.

West Texas Fields

(Continued from Page 75)

4,500-45 feet, 535 bbls. Seaboard Oil Corp. No. 1 Munger-Nix, temporarily abandoned at 4,526 feet.

Crockett County

Mac T. Anderson No. 1 Sarg Estate, 2,600-04 feet, 177 bbls. H. W. Black and Eubank No. 1 Humble-University, 1,331-1,420 feet, 63 bbls.

Dawson County

Atlantic No. 1 Scanlon, dry and abandoned at 4,965 feet.

Howard County

Magnolia Petroleum Co. No. 5 O'Daniel, 2,614-2,790 feet, 264 bbls. Moore Brothers No. 5-A Snyder, 2,615-2,798 feet, 1,181 bbls.; No. 5-A T. & P. Land Trust, 2,700-2,870 feet, 711 bbls.; No. 1-B T. & P. Land Trust, dry and abandoned 2,900 feet. Lloyd Noble No. 1-A O. Chalk. 3,005-15 feet, 1,488 bbls.

Ector County

Barnsdall No. 14 H. Foster, 4,180-4,290 feet, 997 bbls.; No. 20 H. Foster, 4,110-4,230 feet, 853 bbls. Broderick & Calvert No. 8 Foster, 4,170-4,290 feet, 1,161 bbls.; No. 1 T. & P. Land Trust, 4,045-4,160 feet, 3,048 bbls. Devonian Oil No. 4-F Scharbauer, 4,183-4,210 feet, 519 bbls. Gulf Oil Corp. No. 105 Goldsmith, 4,105-90 feet, 1,904 bbls.; No. 2 Parker, 4,153-4,200 feet, 539 bbls. Humble Oil & Refining Co. No. 13-C Scharbauer, 4,225-35 feet, 308 bbls. Landreth Oil No. 1-O Scharbauer, abandoned location. Oil Well Drilling No. 6-A Cowden, 4,046-4,199 feet, 1,450 bbls. Phillips-Pure No. 26 Cowden, 4,095-4,155 feet, 4,512 bbls.; No. 27 Cowden, 4,095-4,145 feet, 70 bbls.; No. 28 Cowden, 4,110-78 feet, 986 bbls.; No. 29 Cowden, 4,103-52 feet, 1,242 bbls. Shell Pet. Corp. No. 12-B Cowden, 4,050-4,210 feet, 844 bbls. Sinclair Prairie No. 7 D. Johnson, 4,175-4,265 feet, 481 bbls.; No. 1 University, 3,465-3,635 feet, 556 bbls. Stanolind Oil & Gas No. 71 J. M. Cowden, 4,095-4,320 feet, 926 bbls. Sunray Oil No. 3-D H. C. Foster, 4,194-4,270 feet, 555 bbls. Texas Co. No. 21 Connell, 3,430-3,660 feet, 315 bbls.; No. 2 McDonald, 3,370-3,670 feet, 1,182 bbls. L. H. Wentz No. 9-D Parker, 4,070-4,200 feet, 875 bbls.; No. 5-A T. & P. Land Trust, 4,040-4,155 feet, 2,627 bbls.

Pecos County

Fritz & Gray No. 2 Pecos Valley, 1,580-1,645 feet, 260 bbls. J. D. Kugle, Jr. No. 1 Jackson, 2,060-86 feet, 20 bbls. W. H. Street No. 4 Pecos Valley, 1,616-58 feet, 20 bbls.

Reeves County

Grisham-Hunter No. 1 George Daniel, dry and abandoned 4,653 feet.

Ward County

Gulf Oil Corp. No. 94 Estes, 2,490-2,649 feet, 971 bbls. H. E. Lynch No. 2-A Johnson, 1,912-2,065 feet, 332 bbls. Magnolia Petroleum Co. No. 4-46 Sealy, 2,740-2,855 feet, 557 bbls. Sinclair Prairie No. 1-47 Sealy, abandoned location; No. 3 Sealy, 2,678-3,026 feet, 356,000 feet gas.

Winkler County

Samwan Oil No. 2 Kessler, 3,083-3,203 feet, 109 bbls. Magnolia Petroleum Co. No. 12 Scarborough, 2,905-3,075 feet, 46 bbls.; No. 12 State-Walton, 2,828-2,911 feet, 735 bbls.

Yoakum County

Magnolia Petroleum Co. No. 1 Bennett, 5,169-5,252 feet, 1,429 bbls. J. W. Murchison No. 3 Elliott, 4,779-5,070 feet, 351 bbls.

WEST CENTRAL TEXAS COMPLETIONS

Jones County

King Oil Co. No. 5 C. L. Carter, 315 bbls. of oil in 22 hours after 50-quart shot from 1,920-44 feet, total depth. Petroleum Producers No. 6 J. S. Milsap and others, 277 bbls. of oil in 24 hours after 85-quart shot from 1,929-47 feet, 1,951 feet, total depth.

Shackelford County

Poly Oil Corp. No. 15 Florence Spears, abandoned dry at 796 feet, total depth. J. F. Baker No. 4 M. Davis, 25 bbls. of oil daily from 1,620-48 feet, total depth. Owens-Snebold Oil Corp. No. 5 D. A. Ivy, 326 bbls. of oil daily from 3,199-3,219 feet, acidized 1,000 gallons, 3,234 feet, total depth. Iron Mountain Oil Co. No. 3 O. E. Beck, 557 bbls. of oil daily through three-quarters inch choke from 3,208-22 feet, acidized 1,000 gallons. Frank Whitten and D. L. Byars No. 3 Diller, 12 bbls. of oil daily from 584-92 feet, total depth. Dickey Brothers No. 5 C. H. Sanford, abandoned dry at 377 feet, total depth.

Callahan County

Harvey & Ames No. 4 E. L. Finley, abandoned dry at 927 feet, total depth. Henderson & Shipp No. 1 Lacy, abandoned dry at 475 feet, total depth. F. J. Borman No. 1 A. Hickman, abandoned dry at 554 feet, total depth.

PANHANDLE COMPLETIONS

(24-hour gauges)

Carson County

Hagy, Harrington & Marsh No. 1 Coffee, 2,550-2,818 feet, 24,815,000 feet gas; No. 1 Pichens, 2,765-2,800 feet, 26,855,000 feet gas. Magnolia Petroleum Co. No. 41 fee, 2,930-3,050 feet, 387 bbls.

Gray County

Stanolind Oil & Gas No. 6 Merten, 3,247-91 feet, 169 bbls.

Hutchinson County

Magnolia Petroleum Co. No. 1 E. Gerring, 2,498-2,755 feet, 5,164,000 feet gas. J. R. Phillips and others No. 1 Ware, 2,925-3,959 feet, 421 bbls. Phillips Petroleum Co. No. 17 Perkins, 2,885-2,900 feet, 306 bbls. Stanolind Oil & Gas No. 16 Watkins, 2,848-2,906 feet, 516 bbls. Stansylvania Oil Co. No. 6 Stansberry, 3,020-30 feet, 398 bbls. Sturdevant and others No. 1 Christian, 3,083-99 feet, 584 bbls.

Moore County

Phillips Petroleum Co. No. 1 R. D. Field, 2,920-3,065 feet, 8,420,000 feet gas.

Wheeler County

Remo Royalty Co. No. 2 Sloss-Admire, 2,196-2,202 feet, 158 bbls.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, June 18.—Crude petroleum and natural gasoline produced from all Canadian fields in April totaled 464,316 bbls. compared with 480,803 bbls. in March and 188,014 bbls. in April, 1937. In the first four months of 1938 the output was 1,815,685 bbls. against 659,655 bbls. in the same period last year.

In Southwest Turner Valley, Frontier Royalties No. 1, LSD 11, section 16-18-2w5, finished at 6,915 feet after getting the Madison limestone at 6,489 feet, established a new high for settled natural production with 7,396 bbls. on a three-day test. The previous high was Davies-Royalite No. 2 with 7,087 bbls. in three days. Acidization is expected to bring production to a new peak for the field. Location is somewhat high on the west flank, and just south of Brown Oil Corp. No. 1, one of the major producers. Frontier Royalties No. 1 was sponsored by the Anglo-Canadian Oil Co. and acreage was subleased from Okalta Oils, subject to 10 per cent royalty with 15 per cent if production exceeded 500 bbls. a day.

West Flank Completions

Several large producers have been completed and are awaiting official tests for potential. North and west of the previous west flank producers, Royalite Oil Co. No. 30, LSD 11, section 32-18-2w5, finished at 7,690 feet after drilling 470 feet of limestone, is testing for potential, following acidization. It averaged 501 bbls. a day naturally on three-day test, and is expected to rank among the larger wells.

In section 29-18-2w5, Globe Royalite No. 1, LSD 7, finished at 7,403 feet after getting the Madison limestone at 6,955 feet. It started blowing by heads while bailing, and looks like a good producer.

In section 21-18-2w5, Barsac Royalties No. 1, LSD 12, finished 460 feet in the Madison at 6,866 feet depth, gave around 650 bbls. a day natural production, and is being acidized.

In section 20-18-2w5, United-Brown Petroleums No. 5, LSD 1, finished at 7,303 feet, 464 feet in the Madison, when tubing was run and the hole cleared by gas lift. It is testing production.

In section 17-18-2w5, Sundance Royalties No. 1, LSD 9, finished at 7,410 feet after getting the lime at 6,942 feet, is completing 10-day official test for potential.

South End Producer

In the south end of the field, National Petroleum Corp. No. 2, LSD 14, section 9-18-2w5, has presented somewhat unusual conditions which may affect drilling operations farther south. Lime contact was made at 7,083 feet (corrected depth), the top of the lime being saturated and fairly porous. From 7,230 to 7,330 feet the lime showed porosity and at intervals to 7,670 feet. At 7,680 feet a change in formation indicated that the black lime had been reached; but geologists of the petroleum and natural gas division identified samples as mainly porous sandstone with some light green shale that looked like a recurrence of the Blairmore formation. The company cemented off the bottom 60 feet and treated the upper porous horizon of the lime with about 3,000 gallons of acid, developing 270 bbls. a day production with about 500,000 feet of gas. A directional survey of the hole has since been made and the upper lime reacidized.

In section 28-18-2w5, Richland Royalties No. 2, LSD 5, finished as a small producer at 6,950 feet, has been reacidized. In section 29-18-2w5, Davies Petroleums No. 1, LSD 2, finished as a fair producer at 7,375 feet, has rigged cable outfit to clean out caving in the lower lime.

Tests in the Lime

In section 17-18-2w5, Coronation Royalties No. 1, LSD 10, got the Madison limestone at 7,102 feet and cemented at 7,117 feet. It is deepening in hard lime below 7,187 feet.

In West Central Turner Valley, Vulcan-Brown Petroleums No. 1, LSD 10, section 5-19-2w5, finished in the Madison below 7,430 feet, and is tubing and clearing before testing production.

West Flank Drilling

In West Central Turner Valley, Mercury Royalties No. 1, LSD 8, section 5-19-2w5, is in the poker chip shales below 5,974 feet after getting the Kootenay-Fernie contact at 5,850 feet. It is expected to get the limestone around 6,100 feet.

In section 32-18-2w5, Vantage Oils No. 1, S half LSD 12, is spudding. It is west of Royalite No. 30 producer. West Turner Petroleums No. 2, LSD 7, is below 6,300 feet.

In section 29-18-2w5, Drilling Contractors, Ltd., are preparing to deepen Command Oils No. 1, LSD 14, from 810 feet, under contract. P. & H. Development Co. No. 1 Alco, LSD 13, is below 700 feet. Royalite Oil Co. No. 31, LSD 16, is below 6,374 feet.

In section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, is standing at 5,684 feet, waiting for rotary outfit. Producers Crude Corp. No. 1, LSD 11, is below 3,028 feet. Sunset Oils No. 2, LSD 7, is below 5,040 feet. York Oils No. 1, LSD 2, is below 5,685 feet.

In section 17-18-2w5, Royalite Oil Co. No. 32, LSD 8, is below 5,944 feet.

In section 16-18-2w5, Richwell Oil Co. No. 1, LSD 5, is around 2,010 feet, drilling and carrying casing. Okalta Oil Co. No. 7, LSD 3, is below 3,000 feet, drilling and carrying casing.

In section 9-18-2w5, Marine Petroleums No. 1, LSD 11, is standing at 1,330 feet, pending results of the directional survey at National Petroleum Corp. No. 2, immediately to the north. Rex Petroleums No. 1, LSD 9, is standing at 150 feet. Baroils No. 1, LSD 3, is below 630 feet.

In section 5-18-2w5, P. & H. Development Co. No. 1 C. & E., LSD 7, is below 175 feet.

In section 33-17-2w5, Davies Petro-

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leums No. 3, LSD 7, is preparing to resume after running 10¾-inch casing to 3,245 feet.

Okalta Deep Test

Some 2 miles west of the crude area, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is below 8,260 feet after encountering the grit beds marker around 8,200 feet. The log confirms the estimates of Dr. G. S. Hume, and no more repetitions of formation are expected. The limestone is expected around 9,500 feet.

Farther east and north, Anglo-Canadian Oil Co. No. 1, LSD 16, section 31-18-2w5, is below 908 feet, after setting a new Canadian drilling record of 448 feet of hole in one day. It will test a new potential area about a mile west of the original crude oil line.

North Turner Valley

In North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-20-3w5, is below 6,207 feet after getting the cardium sandstone at 5,900 feet. Home Oil Co. No. 2 Millarville, LSD 6, section 33-20-3w5, is below 2,920 feet.

Turner Valley Proration Up

Effective June 17, the proration rate in Turner Valley was raised to 37 per cent of government potential figures from the 30 per cent rate which became effective June 1. The Royalite Oil Co. states it has now arranged its tankage so as to be able to more efficiently handle prairie demand plus a small increase. The rate was reduced from 44 per cent on June 1 to allow storage facilities to be cleared of congestion arising from the rapid development of new wells in the field.

East Side Drilling

On the New Valley structure northeast of Turner Valley, McLeod Oil Co. No. 1, LSD 4, section 6-21-2w5, has bailed about 40 bbls. of crude. It will run 5⅜-inch casing to around 8,400 feet and swab about 1,800 feet of oil standing in the hole.

On the Calling Valley structure, Sentinel Oil Co. No. 1, LSD 1, section 8-20-2w5, is connecting gas to the boilers preparatory to resuming from 6,890 feet.

Standard Plans Survey

Standard Oil Northern, incorporated as an Alberta subsidiary of Standard Oil Co. of California, next month will commence surveys on promising Alberta structures, with John Galloway of Los Angeles in charge of operations. Operations will be directed from Calgary, where permanent offices will be opened. Several crews of geologists and seismologists will be engaged in the work. Dr. Warren Thompson of Denver will be senior field geologist and Bert Beverly will have charge of the seismographic surveys.

Test in the Foothills

On the Brazeau structure in the northern foothills west of Edmonton, Home Oil Co. No. 1 Brazeau, LSD 16, section 17-43-17w5, is in the Lower Benton formation below 4,520 feet.

On the Kootenay dome west of Calgary, Roxana Petroleums No. 1, section 8-24-7w5, is deepening from 3,790 feet after a fishing job.

On the Highwood-Sinclair structure southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, is below 5,855 feet, some 485 feet in the lime, and waiting for new drilling line, after an unexpected pocket of gas jammed the tools and cable. The test is in very hard lime, with the main porous zone expected around 6,000 feet.

Border Fields

In the Taber field, southern Alberta, Plains Petroleum Corp. No. 5, LSD 2, section 36-9-17w4, is below 100 feet. Plains No. 4, LSD 15, section 25-9-17w4, is below 1,900 feet. North Taber Royalties No. 1, LSD 7, section 10-11-15w4, has derrick up and is installing standard outfit from National Petroleum Corp. No. 1 in Turner Valley. Taber Royalties, Ltd., organized by J. B. McCreary and associates is moving in a standard outfit for a test in the North Taber area, to be located by Harry M. B. Inglis, geologist.

In the Lethbridge area, Lethbridge Petroleums & Refining No. 7, LSD 12, section 11-8-22w4, is below 2,760 feet, with casing at 2,300 feet. Gas is expected between 2,900 and 3,000 feet. South of Lethbridge, Northwest Co. No. 1 Oxland, LSD 8, section 1-8-21w4, is below 2,883 feet and logging satisfactorily.

On the Rogers-Imperial structure east of Coutts, Range Oil & Gas Co., No. 3, LSD 15, section 20-1-11w4, is deepening from 1,765 feet.

In the Steveville district, Anaconda Oil Co. No. 1, LSD 15, section 9-22-12w4, is rigging additional equipment, to resume from 1,207 feet.

Blood Reserve Project

The Blood Indian Reserve in Southern Alberta will be tested by West Petroleum, Ltd., of Toronto. The company holds 148,000 acres of leases in the northeast corner of the Reserve, east of the Belly River and west of the St. Mary's River. The area was reported on in 1922 by Eugene Coste, who recommended it as a prospect for high-grade crude. Considerable geological work and extensive structure tests have been carried out in various parts of the Reserve, and the new company is planning a seismic survey in Townships 22, 23 and 24, Ranges 5w4 to 8w4. Officers of the company are: President, Lionel C. West; secretary treasurer, Harold S. Day; directors, Col. Lorne Ardiel, D. R. Michener, E. B. Jolliffe, D. E. Carscallen, all of Toronto, and Hugh M. Campbell, Peterboro, Ontario.

East Central Alberta

In the Vermilion district, east-central Alberta, Wain Town Gas & Oil Co. No. 1, LSD 16, section 26-50-7w4, is below 500 feet after making water shutoff at 315 feet. The test is logging about 235 feet higher than Tenwell Gas & Oil Co. No. 1 in the same area.

Lloydminster Gas Field

An official government test of the Lloydminster gas field in West-Central Saskatchewan was conducted recently by Professor Edmunds of the University of Saskatchewan and M. E. Swain, provincial superintendent of mines. Both closed pressure and open-flow tests were conducted.

Northern Utilities, Ltd., headed by Charles Mills has derrick up on the Morrison farm, 2 miles south of Lloydminster, for a test for gas to be spudded late this month.

Ontario Drilling

In the De Clute field, Kent County, Ontario, Union Gas Co. No. 40, Lot 17, Concession 15, Raleigh Township, finished at 1,550 feet with 3,000,000 feet a day.

In the Tilbury field, Kent County, Union Gas Co. No. 300, W half Lot 158, North Talbot Road, Raleigh Township, finished at 1,480 feet with small shows aggregating about 50,000 feet a day, which rapidly blew down. It was plugged and abandoned. Union Gas Co. No. 301, Lot 9, Concession 15, Tilbury East Township, is starting. Union No. 302, Lot 11, Concession 11, Tilbury East, is starting. Both will be tests of the Tilbury gas sand.

In the Dover field, Kent County, Prairie Oil & Gas Co. No. 7, Lot 5, Front Concession, Dover East Township, is starting as a test of the Trenton limestone.

In the Dawn field, Lambton County, Union Gas Co. No. 94, Lot 22, Concession 1, Euphemia Township, finished a dry hole at 1,920 feet. It was the third of a series of tests for a possible easterly extension of the producing area. Union No. 95, Lot 23, Concession 14, Dawn Township, is rigging.

In Chatham Township, Kent County, Ogletree Syndicate No. 2, Lot 13, Concession 5, bottoming in a pre-Cambrian formation below 5,000 feet, has a fishing job.

In the Brownsville field, Oxford County, Aloka Oil & Gas Co. No. 11 Watterworth, Lot 24, Concession 12, Dereham Township, finished at 940 feet with 5,000,000 feet a day.

In Elgin County, Union Gas Co. No. 1 has been started in Lot 16, Concession 12, Dunwich Township, as a test for gas in the formations underlying the old Dutton shallow oil pool. Crude was encountered some 40 years ago in the Onondaga limestone and it is believed a corresponding structural high will be found in the lower gas-bearing formation. The test is below 500 feet.

In Norfolk County, Harvey Series No. 1, in Windham Township near Vanessa, is below 300 feet on a test for gas.

In Haldimand County, Union Gas Co. No. 207, Lot 3, Concession 3, Rainham Township, is starting.

Revive Mosa Field

Efforts are being made to revive the Mosa shallow pool in Mosa Township, Middlesex County, north of Glencoe. The field was first opened in 1917, and for a few years its flush production made it the largest producing area in Ontario. Recently a well brought in on the John A. Walker farm started pumping at the rate of 200 bbls. a day. Another test is being drilled on the same property, which developed a number of good pumpers in the early days of the field. On the Bert Pretty farm an old producer was cleaned out and shot with dynamite, but failed to develop much production.

Central West Fields

(Continued from Page 84)

B. B. Parent, Lot 5, first quarter, made 40 bbls. of oil the first 24 hours after shot in the Berea sand at 231-336 feet.

In Ashland County, Hanover Township, Ohio Fuel Gas Co. No. 1 Ida Mapes, section 15, is a gas well gauging 370,000 feet from Clinton sand at 2,650-56 feet. In Hanover Township, Mehowa Oil & Gas Co. No. 1 Fred Frank, section 15, made 480,000 feet of gas from Clinton at 2,900-10 feet. In Jackson Township, Ohio Fuel Gas Co. No. 1 L. D. Hall, section 22, is good for 1,300,000 feet of gas in the Clinton at 2,874 feet.

In Athens County, Carthage Township, A. E. Townsend No. 1 W. B. Hartnell, section 2, made 90,000 feet of gas from the Maxon at 1,020-80 feet. Keener sand at 1,110-30 feet was dry.

In Fairfield County, Walnut Township, City Natural Gas Co. No. 1 Warren Bright, section 30, is a dry hole in the Clinton at 2,024 feet.

In Guernsey County, Cambridge Township, Hayes Ferguson No. 1 Mrs. F. Arnold, Lot 1, village of Cambridge, is a small gas well at 1,086 feet.

In Knox County, Union Township, Claremont Oil & Gas Co. No. 1 Virginia Wander, section 4, a Clinton gas well, was deepened to 2,817 feet and is making 10 bbls. of oil daily.

In Licking County, Mary Ann Township, Settles Oil Co. No. 1 Eva L. Robinson, Lot 5, fourth quarter, made 11 bbls. of oil the first 24 hours after shot in Berea sand at 743 feet. In Mary Ann Township, Armbruster & Stricker No. 2 Emma H. Davis, Lot 7, first quarter, is a small Berea gas well at 792 feet.

In Lorain County, Grafton Township, Dillon & McFrederick No. 2 Jacob Schwearer, Lot 37, is a dry hole in the Clinton sand at 2,577 feet.

In Medina County, Spencer Township, Arleigh Hendricks No. 1, drilled by the Ohio Fuel Gas Co., section 2, was abandoned in the Clinton sand at 2,720 feet. The Clinton showed a small amount of oil and gas at 2,632-49 feet.

In Monroe County, Bethel Township, Neff Ridge Oil & Gas Co. No. 2 Allie Beardmore, section 5, is good for 213,000 feet of gas in the lime at 1,290-1,309 feet. In Perry Township, Blue Ridge Oil & Gas Co. No. 10 Isaac H. Bowman, section 23, is a 1-bbl. pumper in the Injun sand at 1,622-32 feet.

In Perry County, Madison Township, Atha Co. No. 21 I. H. Melick, section 20, was dry in the Clinton at 3,157 feet, and abandoned.

In Stark County, Plain Township, McCloy No. 1 Ed Styer, section 10, made 650,000 feet of gas in the Clinton sand at 4,572-4,605 feet.

In Washington County, Independence Township, J. O. Herlan No. 6 E. S. Decker, section 34, made 5 bbls. of oil the first day after shot at 1,017-37 feet. In Liberty Township, Burkhart Oil & Gas Co. No. 2 C. W. Hall, section 3, is a small gas well in the lime at 1,420-30 feet. In Salem Township, Earl Montgomery No. 5 William Gross, Lot 37, is a 1-bbl. pumper in the Maxburg at 912-14 feet.

Lima Field

In Putnam County, Blanchard Township, Norton Stuart Petroleum Co. No. 8 W. D. Williams, section 22, has 1,000 feet of oil in the hole after a shot with 140 quarts in the Trenton at 1,331-72 feet. The No. 6, same farm and same operators, which was drilled into the St. Peter sand at a depth of 2,020 feet, was plugged back to 1,971 feet. An oil showing was shot in the Green sand at 1,956-63 feet. The hole is being cleaned out.

Eastern Fields

(Continued from Page 88)

Springs anticline on the Giles Hammat Heirs farm in Grant district. In Lubeck district, Wood County, W. H. Bickel has landed casing on bottom at 4,385 feet on his own fee and is ready to start drilling.

In Sherman district, Boone County, the Columbian Carbon Co. is drilling at 4,457 feet in the R. H. Wood and others No. 3 with a showing of 80,000 feet of gas.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Wilshire Oil Co., No. 1 Gaviota, Santa Barbara	35- 5-33	4,300	sd. sh. drlg.
General Pet., No. 23 Erburu, Capitan, Santa Barbara	5- 4-30	1,310	pump. 122 b.d.
Montgomery, H. S., No. 1 Wagner, Capitan, S. Barbara	tideland	1,302	well P.B.
South Crude Oil, No. 2-191, Coal Oil Pt., Santa Barbara	tideland	5,510	redrlg. 3,098
Hancock-Bush, No. 4 Hopkins, S. Maria, S. Barbara	30-10-33	2,396	sd. sh. drlg.
Bankline Oil, No. 1 Silva,, Santa Maria, Santa Barbara	7- 9-33	5,558	dry; abd.
Pacific West. Oil, No. 1 Car., Santa Maria, S. Barbara	28-10-34	4,992	flow. 3,250 b.d.
Moore, E. H., No. 10 Sugar, Santa Maria, S. Barbara	24-10-34	2,160	sd. sh. drlg.
G. & B. Oil, No. 1 B. & G., Santa Maria, S. Barbara	26-10-34	5,174	sd. sh. drlg.
Selegna Oil, No. 1 S. M., Santa Maria, Santa Barbara	26-10-34	4,925	sd. sh. drlg.
Signal Oil, No. 12 Yelkin, Santa Maria, Santa Barbara	26-10-34	4,895	br. sh. drlg.
Union Oil, No .2 Wheat, Santa Maria, Santa Barbara	22-10-34	3,597	sd. sh. drlg.
Union Oil, No. 3 Vicente, Santa Maria, Santa Barbara	21-10-34	4,200	sd. sh. drlg.
Union Oil, No. 1 Nicolai, Santa Maria, Santa Barbara	28-10-34	4,890	sd. sh. drlg.
Jones, F. E., No. 2 Wisconsin, S. Maria, S. Barbara	27-10-34	4,657	cleaning out
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	5,529	P.B. 5,090
O'Donnell, J. E., No. 1 Helen, Lompoc, Santa Barbara	8- 7-33	3,486	br. sh. drlg.
Douglas Oil, No. 1, Los Alamos, Santa Barbara	8- 8-33	5,295	sd. sh. drlg.
Barnsdall Oil, No. 3 Tognazzini, Gato Rdg., S. Barbara	9- 8-32	1,600	sd. sh. drlg.
United West. Oil, No. 1 Los Olivos, Santa Barbara	16- 7-30	3,270	hd. sd. drlg.
Continental Oil, No. 1, Los Olivos, Santa Barbara	24- 8-31	2,391	sd. sh. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,690	hd. sh. drlg.
St. Louis Oil, No. 1 Pirie, Ojai, Ventura	18- 4-22	1,744	pump. 12 b.d.
Rowe, W. G., No. 1 Johnson, Oxnard, Ventura	15- 1-22	4,728	sd. sh. drlg.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	5,470	gr. sd. drlg.
Merchants Pet., No. 8 Sespe, Ventura	1- 4-20	590	sd. sh. drlg.
Claran, F. E., No. 1 Hardison, Sespe, Ventura	32- 4-20	403	idle
Condor Oil, No. 1 Dorman, Sespe, Ventura	6- 4-19	2,150	pump. 50 b.d
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	1,610	reaming
Darby Oil, No. 1 Cohn, Moor Park, Ventura	7- 2-19	1,140	sd. sh. drlg.
C. C. M. Oil, No. 21 Hobson, Rincon, Ventura	8- 3-24	4,533	O.S. drlg.
Richfield Oil, No. 8-F Hobson, Rincon, Ventura	8- 3-24	2,836	hd. sd. drlg.
Tide Water A., No. 19 V.L.W., Ventura Ave., Ventura	26- 3-23	9,525	O.S. drlg.
Tide Water A., No. 75 Lloyd, Ventura Ave., Ventura	26- 3-23	5,387	fishing
Tide Water A., No. 111 Lloyd, Ventura Ave., Ventura	27- 3-23	8,274	sd. sh. drlg.
Tide Water A., No. 127 Lloyd, Ventura Ave., Ventura	27- 3-23	5,635	sd. sh. drlg.
Tide Water A., No. 7 Hartman, Ventura Ave., Ventura	22- 3-23	4,674	sd. sh. drlg.
Tide Water A., No. 11 McGonigle, Ventura Ave., Ven.	23- 3-23	6,191	fishing
Shell Oil, No. 96 Taylor, Ventura Ave., Ventura	28- 3-23	4,981	sd. sh. drlg.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	7,298	sd. sh. drlg.
Shell Oil, No. 37 Gosnell, Ventura Ave., Ventura	28- 3-23	8,618	well P.B.
General Pet., No. 18 Barnard, Ventura Ave., Ventura	21- 3-23	5,020	sd. sh. drlg.
Lloyd Corp., No. 1 Dabney-Lloyd, Ventura Ave., Ven.	24- 3-23	7,487	dry; abd.
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	8,297	redrlg. 7,198
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	530	O.S. drlg.
Franco-Western Oil, No. 15, McKittrick, Kern	8-30-22	2,204	pipe bad
Leyse & Sonne, No. 1 Pasadena, McKittrick, Kern	28-30-22	3,064	sd. sh. drlg.
Chico-Martinez Oil, No. 1 Holly, South Belridge, Kern	1-29-20	1,106	P.B. 1,020
Randan Pet., No. 1 Theta, Lost Hills, Kern	3-26-20	1,625	cmtd. 1,535
Belridge Oil, No. 27-5 North Belridge, Kern	27-27-20	7,651	br. sh. drlg.
Belridge Oil, No. 27-6 North Belridge, Kern	27-27-20	8,400	flow. 410 b.d.
Belridge Oil, No. 35-26, North Belridge, Kern	35-27-20	8,313	O.S. drlg.
Tide Water A. O., No. 3-21, North Belridge, Kern	21-27-20	8,016	gr. sd. drlg.
Richfield Oil, No. 2, North Belridge, Kern	22-27-20	6,481	br. sh. drlg.
Texas Co., No. 4 Martin, North Belridge, Kern	22-27-20	7,371	br. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	1,400	rig. to pump
Pan-May Oil, No. 1 Coffee, Round Mountain, Kern	31-27-29	1,057	rebldg. rig
Shamrock Pet., No. 7 Coffee, Round Mountain, Kern	6-28-29	1,580	cleaning out
Eastmont Oil, No. 7A Olcese, Round Mountain, Kern	16-28-29	1,860	dry; abd.
Shell Oil, No. 17 Freeman, Round Mountain, Kern	20-28-29	1,934	pump. 45 b.d.
Shell Oil, No. 3 Olcese-Lilly, Round Mountain, Kern	21-28-29	1,620	pump. 40 b.d.
Shell Oil, No. 20 Caldwell, Round Mountain, Kern	7-28-29	1,955	sd. sh. drlg.
McDonald & Dearin, No. 4, Kern Front, Kern	11-28-27	1,918	O.S. drlg.
Rubenstein, A. B., No. 1 Lerdo, Kern	20-28-27	3,302	cleaning out
Fuhrman, Alfred, No. 25 Kern River, Kern	21-28-28	540	sd. sh. drlg.
Helm & Smith, No. 4A Kernco, Kern River, Kern	34-28-28	598	O.S. drlg.
Hast Oil, No. 2 Kern, Kern River, Kern	34-28-28	390	pump. 10 b.d.
Deene, G. W., No. 1 Poso, Mount Poso, Kern	26-26-28	918	sd. sh. drlg.
Master Pet., No. 3 Recovery, Mount Poso, Kern	33-26-28	1,599	pump. 40 b.d.
Vanguard Oil, No. 11 Baker, Mount Poso, Kern	33-27-28	1,808	pump. 225 b.d.
Western Gulf Oil, No. 36 KCL, Fruitvale, Kern	14-29-27	2,981	flow. 160 b.d.
Western Gulf Oil, No. 4 Sawyer, Fruitvale, Kern	27-29-27	3,474	P.B. 3,430
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	3,691	sd. sh. drlg.
Mesa Pet., No. 1 Dixon, Fruitvale, Kern	23-29-27	3,080	sd. sh. drlg.
Hogan Pet., No. 11 Porter, Mountain View, Kern	29-30-29	4,391	sd. sh. drlg.
Johnson, G. W., No. 1 Brown, East Edison, Kern	33-29-30	1,163	sd. sh. drlg.
Stevens, R. W., No. 1, Caliente Creek, Kern	22-30-30	241	sd. sh. drlg.
Union Oil, No. 1 Berry, Arvin, Kern	15-31-29	6,135	pump O. & W.
Petrex, Inc., No. 1 Edison, Arvin, Kern	32-31-30	4,897	sd. sh. drlg.
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	5,886	sd. sh. drlg.
Continental Oil, No. 1 Seaboard, KCL, Wasco, Kern	26-27-24	10,989	sd. sh. drlg.
Standard Oil, No. 8-1-B, KCL, Wasco, Kern	17-24-24	5,762	sd. sh. drlg.
Standard Oil, No. 1 Mushrush, Wasco, Kern	7-27-24	2,461	sd. sh. drlg.
Superior Oil, No. 4 Wagner, Rio Bravo, Kern	35-28-25	11,385	sd. sh. drlg.
Superior Oil, No. 2 Geissinger, Bravo, Kern	35-28-25	10,601	sd. sh. drlg.
Superior Oil, No. 3 Geissinger, Bravo, Kern	35-28-25	5,380	sd. sh. drlg.
Superior Oil, No. 1 Anderson, Rio Bravo, Kern	35-28-25	11,405	sd. sh. drlg.
Superior Oil, No. 1 Heibling, Rio Bravo, Kern	1-29-25	9,880	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	11,204	mill. 6,102
Union Oil, No. 3-34 KCL, Rio Bravo, Kern	34-28-25	10,439	sd. sh. drlg.
Getty Oil, No. 2 Ramsey, Rio Bravo, Kern	35-28-25	7,175	sd. sh. drlg.
General Pet., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	10,192	redrlg. 8,881
General Pet., No. 2 Wagoner, Rio Bravo, Kern	35-28-25	11,275	sd. sh drlg.
Standard Oil, No. 18-1 KCL, Una, Kern	29-28-26	8,938	sd. sh. drlg.
Shell Oil, No. 83-35 KCL, McFarland, Kern	35-26-25	7,287	sd. sh. drlg.
White, C. C., No. 1 Armstrong, McFarland, Kern	9-26-26	2,174	sd. sh. drlg.
Tide Water A. O., Well No. 1, Pond, Kern	17-26-25	2,080	sd. sh. drlg.
Dilmar Oil, No. 1 Quinn, Jasmin, Kern	15-25-27	2,875	recmtd. 2,829
Standard Oil, No. 11-2 KCL, Greeley, Kern	20-29-26	11,520	flw. 10,000 b.d.
Standard Oil, No. 11-15 KCL, Greeley, Kern	18-29-26	6,594	sd. sh. drlg.
Continental Oil, No. 1-E KCL, Stevens, Kern	17-30-26	8,287	P.B. 8,262
Standard Oil, No. 15-2 KCL, Canfield Ranch, Kern	27-30-26	6,971	sd. sh. drlg.
Shell Oil, No. 38-29-A KCL, Ten Section, Kern	29-30-26	7,793	sd. sh. drlg.
Shell Oil, No. 58-30-B KCL, Ten Section, Kern	30-30-26	8,220	flow. 2,817 b.d.
Shell Oil, No. 32-32-B KCL, Ten Section, Kern	32-30-26	5,190	sd. sh. drlg.
Shell Oil, No. 58-20-B KCL, Ten Section, Kern	20-30-26	7,686	sd. sh. drlg.
Shell Oil, No. 32-13-A KCL, Canal, Kern	13-30-25	8,329	P.B. 8,205
Ohio Oil, No. 7-E KCL, Canal, Kern	14-30-25	4,831	sd. sh. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	10,905	hd. sd. drlg.
Signal Oil, No. 5 Kendon, Midway-Sunset, Kern	35-32-23	1,701	rig. to pump
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	8,464	P.B. 8,326
Surprise Oil, No. 3, Midway-Sunset, Kern	36-32-23	841	sd. sh. drlg.
National Oil, No. 18, Midway-Sunset, Kern	35-32-23	861	sd. sh. drlg.
A.B.S. Corp., No. 12 Lewis, Sunset, Kern	20-11-23	3,980	P.B. 3,400
Petrol Corp., No. 33-5 Reserve, Tejon Ranch, Kern	33-11-19	3,460	sd. sh. drlg.
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	9,800	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	3,682	sd. sh. drlg.
Pure Oil, No. 1 SPL, Cantua, Fresno	31-18-17	10,862	redrlg. 9,297
Magnet Oil, No. 2 Fearon, Fresno	18-20-15	2,160	sd. sh. drlg.
Pet. Sec., No. 2 Gatchell, Turk, Fresno	18-20-16	6,850	cmtd. 6,700
Dauphin Dev., No. 1 Boone, Alcalde, Fresno	30-21-14	3,778	redrlg. 2,535
Wilcox, J. F., No. 6, Coalinga, Fresno	11-20-14	565	bail. oil
K.N.D.A., No. 67-20-J Kettleman North, Fresno	20-21-17	10,970	hd. sd. drlg.
K.N.D.A., No. 6-8-Q Kettleman North, Kings	6-22-18	8,719	recmtd. 8,065
K.N.D.A., No. 38-8-Q Kettleman North, Kings	8-22-18	8,792	cleaning out
K.N.D.A., No. 27-16-Q Kettleman North, Kings	16-22-18	7,498	sd. sh. drlg.
K.N.D.A., No. 58-16-Q Kettleman North, Kings	16-22-18	7,990	sd. sh. drlg.
K.N.D.A., No. 47-18-Q Kettleman North, Kings	18-22-18	8,004	cleaning out
K.N.D.A., No. 43-20-Q Kettleman North, Kings	20-22-18	8,025	hd. sh. drlg.
K.N.D.A., No. 27-22-Q Kettleman North, Kings	22-22-18	6,673	br. sh. drlg.
Standard Oil, No. 46-13-H Kettleman North, Fresno	13-21-16	10,836	cmtd. 10,804
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	10,800	flow. 713 b.d.
Standard Oil, No. 58-33-J Kettleman North, Fresno	33-21-17	8,310	gr. sd. drlg.
Standard Oil, No. 78-1-P Kettleman North, Kings	1-22-17	7,550	gr. sd. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	7,248	redrlg. 7,227

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandened.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in. prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Standard Oil, No. 74-7-Q Kettleman North, Kings	7-22-18	7,352	P.B. 7,144
Standard Oil, No. 85-7-Q Kettleman North, Kings	7-22-18	7,950	flow. 583 b.d.
Standard Oil, No. 61-21-Q Kettleman North, Kings	21-22-18	4,792	sd. sh. drlg.
Dudley Ridge Oil, No. 2 Josephine, Cloud, Kings	24-23-20	6,097	sd. sh. drlg.
Cal. Pet. Prod., No. 1 Elkhorn, San Luis Obispo	6-10-25	1,872	hd. sh. drlg.
Hancock Oil, No. 1 Dick, Huasna, San Luis Obispo	30-12-33	3,361	cleaning out
West. Plains Oil, No. 2 Panorama Hills, S. Luis Obispo	2-32-21	2,630	hd. sd. drlg.
Crusaders Oil, No. 1 Ducor, Tulare	1-24-27	351	reaming
Wilshire Oil, No. 1 Cowell, Half Moon Bay, San Mateo	20- 6-5	2,525	rig. to pump
Ohio Oil, No. 1-A Willard, Willows, Glenn	18-20-2	4,990	sd. sh. drlg.
Richfield Oil, No. 1 Potrero Hills, Solano	10- 4-1	3,250	fish D.P.
Amerada Pet., No. 1 California Lands, Colusa, Colusa	34-16-1	2,581	sd. sh. drlg.
Texas Co., No. 1 Midland, Rio Vista, Sacramento	4- 3-3	3,070	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Apex Pet., No. 3 Elsie, El Segundo, Los Angeles	12- 3-15	6,996	sd. sh. drlg.
Burnoel Pet., No. 1 Elsie, El Segundo, Los Angeles	12- 3-15	2,590	sd. sh. drlg.
Sovereign Oil, No. 2, El Segundo, Los Angeles	12- 3-15	7,096	sd. sh. drlg.
Treasure Oil, No. 3, Playa Del Rey, Los Angeles	21- 2-15	6,510	schist; drlg.
D. & B. Oil, No. 1, Lomita, Los Angeles	30- 4-13	5,275	sd. sh. drlg.
Patton-Conway, No. 1 fee, Torrance, Los Angeles	15- 4-14	4,970	sd. sh. drlg.
Grubbs & Main, No. 1 Lyman, Torrance, Los Angeles	14- 4-14	5,023	sd. sh. drlg.
Gypsy Oil, No. 16 Getty, Torrance, Los Angeles	14- 4-14	3,820	redrlg. 2,692
Albertson Oil, No. 2, Torrance, Los Angeles	14- 4-14	5,032	flow. 130 b.d.
Ind. Drlg., No. 1 Mitchell, Torrance, Los Angeles	15- 4-14	4,810	sd. sh. drlg.
McCowan, C. T., No. 1 Lindis, Torrance, Los Angeles	23- 4-14	4,780	redrlg. 1,990
McDonald & Burns, No. 2 Moore, Torrance, L. Angeles	23- 4-14	3,775	rigging up
McDonald & Burns, No. 7 Moore, Torrance, L. Angeles	23- 4-14	3,775	cleaning out
Lomita Drlg., No. 1 Stevenson, Torrance, Los Angeles	23- 4-14	4,761	sd. sh. drlg.
Calmont Oil, No. 1 Talbert, Torrance, Los Angeles	23- 4-14	3,815	redrlg. 2,994
M. P. S. Oil, No. 1 Julian, Torrance, Los Angeles	14- 4-14	3,801	rigged up
Camp, C. W., No. 13, Torrance, Los Angeles	23- 4-14	4,244	idle
Doyle Pet., No. 3-A Getty, Torrance, Los Angeles	14- 4-14	5,594	cmtd. 5,594
Elexico Oil, No. 1 Allen, Torrance, Los Angeles	23- 4-14	4,910	O.S. drlg.
Charleston Oil, No. 1 Marcoux, Torrance, L. Angeles	14- 4-14	4,397	sd. sh. drlg.
Kovell Oil, No. 1, Torrance, Los Angeles	22- 4-14	2,290	sd. sh. drlg.
Summit Oil, No. 2 Wilson, Torrance, Los Angeles	14- 4-14	4,971	flow. 220 b.d.
Hughes, W., No. 2, Torrance, Los Angeles	23- 4-14	5,005	sd. sh. drlg.
Hughes, W., No. 3, Torrance, Los Angeles	14- 4-14	3,750	idle
Krause & Baker, No. 2 Gladys, Torrance, Los Angeles	14- 4-14	3,795	rigged up
Peters Royalty, No. 1, Torrance, Los Angeles	14- 4-14	5,023	pump. water
Packard Pet., No. 1 Kelley, Torrance, Los Angeles	14- 4-14	3,806	cleaning out
Texas Co., No. 10 Wilson, Torrance, Los Angeles	22- 4-14	4,900	O.S. drlg.
Texas Co., No. 11 Wilson, Torrance, Los Angeles	14- 4-14	5,026	sd. sh. drlg.
Wilton Oil, No. 4, Torrance, Los Angeles	22- 4-14	3,675	sd. sh. drlg.
Star Pet., No. 1 G. & A., Torrance, Los Angeles	23- 4-14	4,936	sd. sh. drlg.
Silver Beach Oil, No. 1, Torrance, Los Angeles	14- 4-14	4,589	redrlg. 3,398
Imperial Gypsum, No. 2 Getty, Torrance, Los Angeles	14- 4-14	3,785	cleaning out
Zenith Oil, No. 1, Torrance, Los Angeles	14- 4-14	2,992	sd. sh. drlg.
C.C.M.O. Co., No. 8, Torrance, Los Angeles	15- 4-14	3,723	rigged up
C.C.M.O. Co., No. 13, Torrance, Los Angeles	15- 4-14	4,910	O.S. drlg.
Hansco Oil, No. 1, Torrance, Los Angeles	14- 4-14	4,887	sd. sh. drlg.
Kamco, Inc., No. 1, Torrance, Los Angeles	33- 3-13	3,850	idle
Berken Oil, No. 1 Star, Torrance, Los Angeles	15- 4-14	4,998	cleaning out
Stabler, W., No. 2 Marland, Dominguez, Los Angeles	3- 4-13	4,364	O.S. drlg.
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	7,550	redrlg. 6,285
Union Oil, No. 62 Callender, Dominguez, Los Angeles	33- 3-13	4,561	sd. sh. drlg.
Shell Oil, No. 95 Reyes, Dominguez, Los Angeles	33- 3-13	4,390	sd. sh. drlg.
Barnsdall Oil, No. 4 Trust, Rosecrans, Los Angeles	18- 3-13	3,792	sd. sh. drlg.
Union Oil, No. 20 Rosecrans, Rosecrans, Los Angeles	18- 3-13	5,950	sd. sh. drlg.
Union Oil, No. 21 Rosecrans, Rosecrans, Los Angeles	19- 3-13	3,080	sd. sh. drlg.
Union Oil, No. 23 Rosecrans, Rosecrans, Los Angeles	18- 3-13	2,743	sd. sh. drlg.
Universal Consd., No. 3 Trust, Rosecrans, Los Angeles	18- 3-13	7,715	flow. 250 b.d
Howard Oil, No. 1 Gordon, Rosecrans, Los Angeles	19- 3-13	6,596	redrlg. 5,640
Barnsdall Oil, No. 3 S.F., Newhall, Los Angeles	26- 4-17	6,585	O.S. drlg.
Shell Oil, No. 1 Dougherty, Saugus, Los Angeles	9- 4-17	2,195	sd. sh. drlg.
Royal Lands Corp., No. 1 Ramona, Castaic, L. Angeles	8- 4-17	730	sd. sh. drlg.
General Pet., No. 3 Blinn, Wilmington, Los Angeles	4- 5-13	3,402	O.S. drlg.
General Pet., No. 16 Harbor, Wilmington, L. Angeles	2- 5-13	2,347	sd. sh. drlg.
Allied Pet., No. 28, Wilmington, Los Angeles	32- 4-13	1,996	sd. sh. drlg.
Getty Oil, No. 1-W, Wilmington, Los Angeles	33- 4-13	5,701	C.P. 5,566
Hogan Pet., No. 4 Graham, Wilmington, Los Angeles	2- 5-13	2,780	sd. sh. drlg.
Hancock Oil, No. 10-B, Wilmington, Los Angeles	2- 5-13	2,590	sd. sh. drlg.
Hancock Oil, No. 24-C, Wilmington, Los Angeles	2- 5-13	3,650	sd. sh. drlg.
Hollywood Oil, No. 2 Baxter, Wilmington, L. Angeles	35- 4-13	2,094	sd. sh. drlg.
Macson Oil, No. 1-55-C, Wilmington, Los Angeles	32- 4-13	2,975	sd. sh. drlg.
Macson Oil, No. 1-55-O, Wilmington, Los Angeles	32- 4-13	2,080	sd. sh. drlg.
Richfield Oil, No. 1-P.D., Wilmington, Los Angeles	2- 5-13	3,091	O.S. drlg.
Richfield Oil, No. 4-P.D., Wilmington, Los Angeles	2- 5-13	1,865	sd. sh drlg.
Richfield Oil, No. 5-P.D., Wilmington, Los Angeles	2- 5-13	3,644	O.S. drlg.
Richfield Oil, No. 7-P.D., Wilmington, Los Angeles	2- 5-13	2,167	sd. sh. drlg.
Richfield Oil, No. 2-R.G., Wilmington, Los Angeles	2- 5-13	3,068	sd. sh. drlg.
Richfield Oil, No. 1 Victory, Wilmington, Los Angeles	35- 4-13	3,177	sd. sh. drlg.
Richfield Oil, No. 3-P.G., Wilmington, Los Angeles	2- 5-13	2,480	sd. sh. drlg.
Royalty Serv., No. 1-P.E., Wilmington, Los Angeles	2- 5-13	1,974	sd. sh. drlg.
Republic Pet., No. 1 Harbor, Wilmington, Los Angeles	2- 5-13	2,700	sd. sh. drlg.
Republic Pet., No. 2 Harbor, Wilmington, Los Angeles	2- 5-13	2,670	sd. sh. drlg.
Sunray Oil, No. 2 Lakme, Wilmington, Los Angeles	32- 4-13	3,150	flow. 375 b.d.
Tide Water A., No. 1 Ban., Wilmington, Los Angeles	29- 4-13	3,499	sd. sh. drlg.
Universal Consd., No. 4 Newport, Wilmington, L. A.	2- 5-13	3,160	O.S. drlg.
Union Pacific, No. 84, Wilmington, Los Angeles	3- 5-13	2,185	sd. sh. drlg.
Union Pacific, No. 7-E, Wilmington, Los Angeles	3- 5-13	3,900	flow. 5,325 b.d.
Union Pacific, No. 8-E, Wilmington, Los Angeles	3- 5-13	3,915	O.S. drlg.
Union Pacific, No. 9-E, Wilmington, Los Angeles	3- 5-13	4,085	O.S. drlg.
Union Pacific, No. 1-P.D., Wilmington, Los Angeles	3- 5-13	2,514	sd. sh. drlg.
Union Pacific, No. 2-P.D., Wilmington, Los Angeles	3- 5-13	4,130	O.S. drlg.
Wilgate Oil, No. 1 Harbor, Wilmington, Los Angeles	2- 5-13	3,703	sd. sh. drlg.
Wil. O. & D., No. 1 Harbor, Wilmington, Los Angeles	33- 4-13	5,695	sd. sh. drlg.
St. Helens Pet., No. 27 Monterey, Montebello, L. A.	2- 2-12	5,400	O.S. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. A.	2- 2-12	2,862	sd. sh. drlg.
St. Helens Pet., No. 2 Eggleston, Montebello, L. A.	2- 2-12	3,471	sd. sh. drlg.
Union Oil, No. 1 H. & S., Montebello, Los Angeles	2- 2-12	5,531	form. test
V-8 Oil, No. 1 Estelle, Montebello, Los Angeles	2- 2-12	3,265	sd. sh. drlg.
Standard Oil, No. 1 McDonald, Montebello, L. Angeles	2- 2-12	2,195	sd. sh. drlg.
Standard Oil, No. 2 Harvey, Montebello, Los Angeles	2- 2-12	5,548	flow. 1,116 b.d.
Herley-Kelley, Inc., No. 1 Burke, Montebello, L. Ang.	2- 2-12	4,681	sd. sh. drlg.
Brookline Oil, No. 1 Drake, Montebello, Los Angeles	2- 2-12	5,695	sd. sh. drlg.
Security L. & W., No. 1 Tobey, Whittier, Los Angeles	8- 2-11	430	sd. sh. drlg.
Hilldon Oil, No. 4 Amebco, N. Long Beach, L. Angeles	13- 4-13	4,187	sd. sh. drlg.
Hilldon Oil, No. 1 Dominguez, N. Long Beach, L. A.	14- 4-13	7,569	O.S. drlg.
Texas Co., No. 1 Wilson, Long Beach, Los Angeles	29- 4-12	3,778	sd. sh. drlg.
Winrock Oil, No. 1 Encinos, Long Beach, Los Angeles	13- 4-13	4,652	pump. 140 b.d.
De Soto Oil, No. 1, Long Beach, Los Angeles	30- 4-12	1,984	sd. sh. drlg.
Richfield Oil, No. 5-B, Long Beach, Los Angeles	13- 4-13	4,583	P.B. 4,530
J. E. F. Oil, No. 1 Schaaf, Huntington, Los Angeles	36- 5-11	4,400	cleaning out
Texas Co., No. 3 Pearce, Huntington, Orange	2- 6-11	4,497	fish. D.P.
Brea Canyon Oil, No. 48, Brea Canyon, Orange	2- 3-10	4,197	O.S. drlg.
Standard Oil, No. 2, Bastanchury, W. Coyote, Orange	21- 3-10	5,914	pump. 235 b.d.
Shell Oil, No. 1 Weisel, Anaheim, Orange	16- 4-10	5,986	sd. sh. drlg.
Shell Oil, No. 1 Cuff, Richfield, Orange	29- 3-9	2,287	sd. sh. drlg.
Millerand Pet., No. 1 Miller, Yorba, Orange	22- 3-9	1,734	sd. sh. drlg.
Brown & Co., No. 2 Hurley, Yorba, Orange	22- 3-9	742	sd. sh. drlg.
Beth Oil, No. 1 Dillingham, Yorba, Orange	21- 3-9	2,351	sd. sh. drlg.
Holly Oil, No. 1 Harris, Yorba, Orange	21- 3-9	1,856	O.S. drlg.
Signet Oil, No. 2 Kraemer, Yorba, Orange	21- 3-9	958	sd. sh. drlg.
A. V. Oil, No. 1 Costa Mesa, Orange	16- 6-10	2,330	sd. sh. drlg.
Congress Oil, No. 1, Santa Ana, Orange	36- 3-9	3,014	perf. csg.

OKLAHOMA

Week Ending June 18

NORTHERN OKLAHOMA

Adair County

Maddon-Penn Mutual Life Ins. Co., C S½ NE NW sec. 5-16-24. T.D. 520 ft.; S.D.

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. T.D. 2,764 ft.; S.D.

Canadian County

Supreme Oil Co. No. 1 Tilly, NW NW NE sec. 20-12-10w. T.D. 115 ft.; crooked hole; to skid.

Cimarron County

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. T.D. 7,682 ft.; opened and flwd. 344 B.O. and 90 B. W. in 3 hrs. through csg.

Cleveland County

Barnsdall Oil Co. No. 1 School Ld., C NW SE sec. 35-5-5ecm. T.D. 5,502 ft.; D.&A.

Coal County

Carter et al No. 1 Mote, C E½ SW NW sec. 19-2-9. Drlg. 2,995 ft.

Comanche County

Midnite O. & G. Co. No. 1 Howe, NW NW NW sec. 20-2n-12w. Drlg. 334 ft.

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. T.D. 760 ft.; S.D.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Ellis County

E. Fletcher No. 1 Wahl, NW NW NW sec. 1-19-25w. T.D. 694 ft.; S.D.

Fisher County

Hollenback & Haley No. 1 Zerger, C SE SW sec. 5-18-6w. T.D. 205 ft.; S.D. for gas.

Garfield County

J. E. Kendall et al No. 1-A State, SW cor. sec. 13-23-3w. Est. 2,000,000 ft. gas at 1,010-35 ft.; T.D. 1,070 ft.; S.D.

Garvin County

First Natl. Oil Co. No. 1 Butterly, NE NE SE sec. 22-1n-1e. Drlg. 734 ft.

Grady County

Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. T.D. 11,415 ft.; pipe stuck.

Greer County

J. H. Everitt No. 1 Graumann, NE NW NW sec. 11-5-21w. T.D. 550 ft.; S.D.

Hughes County

Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. S.D. 1,050 ft.

Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. T.D. 6,286 ft.; plug. 6,612 ft.; drld. out to 5,660 ft.; flwd. 15,068 B.O., wildcat allowable; cmtg. off wtr.

Troup & Strickland No. 1 Brown, NW SW NE sec. 32-6-8. S.D. 660 ft.

Kay County

Champlin Ref. Co. No. 1 Boehm, SW SW NE sec. 24-27-4. T.D. 950 ft.; S.D.

Heimerich & Payne No. 1 Sch. Ld., SW SE SW sec. 16-28-1w. Cd. 2,808-20 ft.; S.G.; P.B. 2,814 ft.; to D.D.

Clark C. Nye No. 1 Willin, SE SE SW sec. 24-27-4. Cg. 3,016 ft.; S.S.O.&G.; S.D. for mach.

E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Westgate-Greenland Oil No. 1 Willin, SE SE SW sec. 24-27-4. Cd. 3,016-26 ft.; drlg. plug.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Cribbs, sec. 28-7n-19w. Drlg. 1,552 ft.

Anderson-Prichard Oil Corp. No. 1 Johnson, sec. 10-7-20w. T.D. 1,213 ft.; S.D.

Anderson-Prichard Oil Corp. No. 1 Sch. Ld., SE SE SE sec. 14-6n-17w. Drlg. 605 ft.

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. T.D. 1,075 ft.; P.B. 900 ft.; to tst. gas sd. at 921-23 ft.

Hughes & Reese No. 1 Fultz, SE SE SE sec. 10-6-18w. T.D. 1,238 ft.; S.D.

Lincoln County

I.T.I.O. No. 1 Bailey, NW NW NE sec. 2-12-5. Drlg. 2,450 ft.

Wilcox O. & G. Co. No. 1 Royer, SE SE NE sec. 18-14-6. T.D. 3,372 ft.; P.B. 3,240 ft.; D.&A.

Logan County

Sinclair-Prairie No. 1 Crews, SW SW NE sec. 27-16-1e. T.D. 5,223 ft.; flwd. 217 B.O. in 24 hrs.; tstg.

Superior Oil of Calif. No. 1 McCulley, C W½ NW NW sec. 26-16-4w. Drlg. 107 ft.

Muskogee County

T. P. Clants No. 1 Jennings, NW NW NE sec. 8-13n-19. S.D. 840 ft.

Heydrick No. 1 Paschall, NE SE NW sec. 22-13n-19. S.D. 678 ft.

O. K. Jackson No. 1-A Smith, SW NE NE sec. 23-16-15. Drlg. 625 ft.

Noble County

Big Chief No. 1 Hoy, SE SE SW sec. 33-21-2w. Loc.

Okfuskee County

Burke-Greis Oil Co. No. 1 Capps, SE cor sec. 7-13-7. T.D. 3,227 ft.; P.B. to 2,854 ft., Prue sd.; shot; D.&A.

Okmulgee County

Manahan Oil Co. No. 1 Kennedy, NE NW NE sec. 31-14-11. Drlg. 350 ft.

Osage County

Chevalier-Simon No. 1 Osage, NW NW SW sec. 33-27-5. Gas 3,074 ft.; drlg. 3,163 ft.

Norbia Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. T.D. 2,784 ft.

Wah Sha She Oil Co. No. 1 Osage, NE NE NW sec. 4-28n-9. Rmg. 1,937 ft.

Pawnee County

O. O. Owens et al No. 1 Riddle, C E½ E½ NW sec. 30-22-7. T.D. 3,390 ft.; 1,700 ft. W.I.H.; S.D.O.

Payne County

R. L. Kemp et al No. 1 Rafferty, SE SE NE sec. 6-18-5. T.D. 3,705 ft.; P.B. to 3,470 ft.; set csg.; W.O.C.

Texas Co. No. 1 Logan, C W½ NW NW sec. 12-17-1e. T.D. 4,956 ft.; flwd. 525 B.O. in 13 hrs.; est. 600,000 ft. gas; grav. 46; ran tbg. to 4,944 ft. and flwd. 275 B.O. in 6½ hrs.; opened and would not flow; S.I.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW sec. 4-2n-15. S.D. 643 ft.; (mach. gone).

Supreme Oil Co. No. 1 Stevenson, SW SW SE sec. 27-3n-14. S.D. 75 ft.

Pontotoc County

Anderson-Prichard No. 1 Mayer, SE SE SW sec. 19-3-8. T.D. 1,412 ft.; H.F.W.; S.D.

Caloma Oil Corp. No. 1 Brents, SE NE SW sec. 4-1n-6. T.D. 1,574 ft.; S.D.

Farmers Mutual Royalty Corp. No. 1 Waite, NE NE NW sec. 9-5-5. Wilcox sd. 3,200 ft.; T.D. 3,234 ft.; set csg. 2,882 ft.; W.O.C.

H. W. Lee No. 1 Weatherby, NW SE NW sec. 24-1n-7. S.D. 700 ft.

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 4,572 ft.; S.D.

Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. T.D. 2,008 ft.; W.O.C.

Pottawatomie County

Atlantic Ref. Co. No. 1-A McCurry, NW NE SW sec. 6-6-4. Loc.

C. W. James No. 1 Henderson, NW NW NE sec. 4-5n-3. Rig.

Pure Oil Co. No. 1 Lack et al, SE SW NW sec. 3-6-5. T.D. 4,270 ft.

J. F. Smith et al No. 1 Henderson, NW NW NE sec. 4-5-3. T.D. 2,330 ft.; S.D.R.

Seminole County

Boetcher O. & G. No. 1 Morgan, SE NE NW sec. 8-5n-7. S.D. 930 ft.

Denver P. & P. No. 1 Mathis, SW NW SW sec. 7-6-6. Dol. 3,760 ft.; cmtg. at 3,700 ft.; swb. 60 B.O. in 16 hrs.; to P.O.P.

Indian States et al No. 1 Johnson, NE SE NE sec. 2-6-5. T.D. 2,965 ft.; R.U. S.T.

R. McQueen et al No. 1 Harris, SW SW SW sec. 30-7-6. C.&P.

Young & Newsom No. 1 Edgeman, SE SE SE sec. 17-7-6. Drlg. 1,700 ft.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. T.D. 2,147 ft.; C.O.; to drill by.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. T.D. 3,110 ft.; S.D.

Carter County

Texas Co. No. 1-B Cathey, SE NE NE

sec. 6-5s-1w. T.D. 5,685 ft.; P.B. 5,477 ft; acd.; pmpd. 56 B.O. in 24 hrs.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW sec. 21-7s-15. T.D. 806 ft.; U.R.

Creek County

L. B. Jackson No. 1 Berryhill, NW NW NW sec. 1-18n-10. Drlg. 250 ft.

Love County

Mossad & Swainsberger No. 1 Barrett, N SE SE sec. 14-6s-2w. T.D. 1,890 ft.; S.D.

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. sec. 35-6s-2w. T.D. 5,961 ft.; fsg.

Marshall County

E. W. Hughes Drlg. Co. et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. S.D. 7,106 ft.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; 9,050 ft.; made several hd. flws., 37-grav. oil. placed on gas-lift.

Tillman County

Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. T.D. 2,000 ft.; S.D.

KANSAS

Week Ending June 18 (Descriptions are East unless marked otherwise)

Barton County

Armer & Vernon No. 1 Seyfert, NW SW NE sec. 3-17-13w. Drlg. 3,398 ft.

Crown Pet. Corp. No. 1 Wolf, SE SW SE sec. 36-19-12w. U.R. at 2,243 ft.

R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.

Kessler O. & G. No. 1 Bowman, SW NE sec. 22-20-16w. Drlg. 1,580 ft.

Sinclair Prairie Oil Co. No. 1 Frederick, SW SW SE sec. 16-16-11w. P.B. 3,333 ft.; swb. 44 B.O. and 170 B.W. in 6 hrs.; P.B. 3,331 ft.; swb. 109 B.O. and 320 B.W. in 9 hrs.

Western Kansas O. & R. Co. and Republic Nat. Gas Co. No. 1 Linsner, SW SW SE sec. 3-17-13w. Arb. 3,362 ft.: T.D. 3,367 ft.; swb. 160 B.O. in 3 hrs.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. T.D. 2,008 ft.; S.G.; S.D.

Heilman & Harwood No. 1 Sawyer, SE NE NE sec. 10-28-7. Drlg. 610 ft.

Max Steinbuchel et al No. 1 Fox, NW SE NE sec. 25-26-3. Drlg. 1,770 ft.

Coffey County

Barner & Leiker No. 1 Knapp, SE SW NW sec. 27-22-14. S.D. 555 ft.

Western Kans. O. & R. Co. No. 1 Knapp, SW SW NW sec. 27-22-14. Spd.

Cowley County

Hutchinson O. & G. Co. No. 1-A Ketchen, SW SE SE sec. 11-35-5. Drlg. 2,340 ft.

Palmer Oil Corp. No. 1 Houser, SE NW SW sec. 13-30-3e. Arb. 3,254-58 ft.; H.F.W.; abd.

Smith et al No. 1 Wilson, SE SW NW sec. 9-33-6. S.O. at 3,096 ft.; 600 ft. F.I.H. in 2 days; T.D. 3,149 ft.; swbd. 6 B.O. and 6 B.W. P.H.; rng. csg.

Dickinson County

Fred Franks et al No. 1 Huffman, NW NW sec. 11-13-1e. S.D. 1,177 ft.

Ellsworth County

Cities Service et al No. 2 Schroeder "A," CNL SW sec. 29-17-9w. Drlg. 1,310 ft.

Finney County

Atlantic Ref. Co. No. 1 Nunn, C SE NE sec. 27-21-34w. T.D. 4,667 ft.; acdz. tstg.; swb. 172 B.O. in 5 hrs.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. Viola 5,350 ft.; dolomite at 5,512 ft.; Wilcox 5,617 ft.; Arb. 5,629 ft.; T.D. 5,655 ft.; rng. elec. survey.

Greenwood County

C. C. Whitaker et al No. 1 Bressner, NW SE sec. 8-26-13e. T.D. 1,498 ft.; 1,000,000 ft. gas est.

Jackson County

Haverback et al No. 1 Marble Bank, C NE NE sec. 26-9-14. H.F.W. 2,220 ft.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. T.D. 2,566 ft.; S.D.

Valerius & Marshall No. 1 Schierecks, C SE sec. 8-18-30w. R.U.R.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW sec. 24-17-4. C.O. 1,130 ft.

Ness County

Mid-Continent Oil Co. No. 1 Collins, NW NW sec. 24-20s-26w. Cellar and pits.

Schoeppel & Elmore No. 1 Moses, C SW NW sec. 10-18-25w. T.D. 4,353 ft.; acd. p. 600 B.O.P.D.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW sec. 18-10-2w. Drlg. 186 ft.

Pawnee County

Kessler Oil & Gas No. 1 Dirks, NW NW NE sec. 14-20-16w. S.D. 3,807 ft.

Pratt County

Tidewater No. 1 Jarboe, C NL SE sec. 25-26-14w. T.D. 4,065 ft.; fsg.

Reno County

L. E. Douglas et al No. 1 Durand SE SE SW sec. 3-23-5w. Drlg. 3,400 ft.

Rice County

Marylyn Oil Co. et al No. 1 Vincent, NW NW NE sec. 5-21-10w. T.D. 3,356 ft.; rng. csg.

Riley County

Coronado Oil et al No. 1 Parks, SE SE sec. 16-10-8. S.D. 890 ft.

Rooks County

Carter Oil Co. No. 1 Whitford, NE NE SE sec. 12-7-17w. T.D. 3.355 ft.; Arb.; P.B. and drld. out to 2,935 ft.; tstg.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. Drlg. 3,500 ft.

Fred Haines et al No. 1 Don, SE SE SW sec. 13-9s-16w. R.U.

J. J. Hall No. 1 Kruse, SE NE sec. 3-10-16w. Drlg. 550 ft.

F. O. Haun No. 1 Gavenhorst, SE SE SE sec. 7-6-16w. Rig.

Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. T.D. 1,000 ft.; C.O.

Rush County

Phillips Pet. Co. No. 1 John Kees, C SE SE sec. 3-19-20w. T.D. 2,500 ft.; S.D. for csg.

Russell County

Aylward Prod. Co. No. 1 Salbach, SE NE sec. 31-14-14w. S.D. 100 ft.; R.U.

El Dorado Ref. et al No. 1 Ruby, NW NE sec. 1-15-13w. Arb. 3,288 ft.; T.D. 3,296 ft.; D.&A.

J. J. Hall No. 1 Landon, SW SE sec. 11-15-14w. T.D. 3,100 ft.; 1,800 ft. O.I.H.; W.O.C.

Phillips Pet. Co. No. 1 Miller, C NW SW sec. 29-13-14w. Drlg. 3,000 ft.

R. H. Shields No. 1 Anschutz, SW SE sec. 2-14-13w. Drlg. 3,110 ft.

Smith & Unruh No. 1 Stielow, NW cor. sec. 32-11-14w. T.D. 2,552 ft.; S.D.

Web-Son O. & R. No. 1 Baxter, NW SE sec. 4-15-15w. Drlg. 2,950 ft.

Sedgwick County

D. M. Crowe et al No. 1 Murphy, SW SW SE sec. 34-29-1w. Rig.

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. S.D. 2,248 ft.

Natl. Ref. No. 1 Trustee, SE NE sec. 8-27-2. Drlg. 1,300 ft.

Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. Drlg. 3,535 ft.

Stafford County

Austin Drlg. Co. No. 1 Slade, NE NW sec. 35-25-12w. Drlg. 3,300 ft.

Carlock No. 1 Richardson, SE SE sec. 10-24-11w. Arb. 3,980-99 ft.; D.&A.

Kenneth Harris No. 1 Barnes, NW cor. sec. 8-21-12w. Loc.

Sumner County

Hapenney et al No. 1 Evers, SE SE NE sec. 27-31-2e. O.W.D.D.; T.D. 2,015 ft.; W.O.C.

Murphy et al No. 1 Tate, SE NW sec. 31-32-2e. S.S.O. at 3,440 ft.; S.D. 3,516 ft.

Woodson County

Cleveland Oil Co. et al No. 1 Fidelity, SE SE NE sec. 34-25-15. T.D. 1,436 ft.; est. 8 B.O.P.D.; grav. 34.6; C.O.

W. C. Cohen et al No. 1 Pendlay, NW SW sec. 5-26-15. Drlg. 1,100 ft.

Hill & McClure No. 1 Kelley, NW SE SW sec. 22-26-14w. S.D. 1,088 ft.

Ward McGinnis No. 1-A Hill, C SW SE sec. 32-26s-15. Spd.

Phil-Han Oil No. 1 Evans, NW SE sec. 21-23-15. Drlg. 1,545 ft.

Max Steinbuchel No. 1 States, NW NE NW sec. 15-26-14. S.D. 160 ft.

Thomas County

Connelly et al No. 1 fee, NW SE SE sec. 4-10-35w. T.D. 132 ft.; S.D.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville County

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. Drlg. gry. sh.&sd. 10,537 ft.

Producers O. & G. Co. No. 1 Locke, NE cor. sec. 9-15-10. O.W.W.O.; old T.D. 2,960 ft.; drld. to 5,407 ft.; Schlumberger indicated S.W.; P.B. 2,848 ft.; perf. 2,695-2,700 ft. and 2,710-21 ft.; tstd. S.W. in 48 hrs.; D.&A.; T.D. 5,407 ft.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Fsg. for reamer lugs 2,281 ft.

Sloan, Lloyd et al No. 1 Sherrill, sec. 12-19-12. T.D. 780 ft.; set 5½-n. 778 ft.; trtd. with 1,000 gal. acd.; tstd. dry; W.O.

Triangle Drlg. Co. No. 4 Thigpen-Herold, 665 ft. S line, 667 ft. W line, NE SE sec. 13-17-12. Set 5½-in. csg. 3,108 ft.; T.D. 3,136 ft.; acdzd. with 2,500 gal.; comp.; 370 B.P.D. on ¼-in. ck.

Union Prod. Co. No. 3-C Skannel, NE cor. sec. 13-17-12. D.S.T. 3,005-21 ft. tstd. 60 ft. mud cut with oil; 520 ft. oil; 420 ft. S.W. in 15 min.; O. sd. 3,015-21 ft.; set 5½-in. csg. 3,168 ft.; tstd. S.W. 3,122 ft.; P.B. 3,105 ft.; perf. 3,096-3,104 ft.; swbg. S.W. 3,906-3,104 ft.; arng. replug back 3,122 ft.

Union Prod. Co. No. 2 Thigpen-Heroid, sec. 13-17-12. T.D. 3,162 ft.; D.S.T. 2,980-3,030 ft.; rec. 400 ft. oil and 120 ft. mud and oil in 21 min.; set 7-in. csg. 3,109 ft.; P.B. 3,132 ft.; treated 2,000 gal. acd.; no ga.; S.I.; W.O. stg.

Caddo Parish

R. E. Allison No. 1 Ellerbee et al., NW cor. sec. 27-18-14. Drlg. sh.&L. 4,255 ft.

Carroll et al No. 1 Hart, NW sec. 26-21-16. R.U.

Driscoll No. 1 Muslow, SE cor. NE NW sec. 4-20-15. R.U. to drill in at 2,197 ft.

J. T. Driscoll No. 4 Self, NE SE sec. 10-20-15. Drlg. ch. rk. 1,472 ft.

A. R. Hancock No. 3 Standard fee, SE cor. sec. 12-12-16. Set 7-in. csg. 1,025 ft.; T.D. 1,053 ft.; comp.; 10 B.P.D.; pmpg.

E. W. McGoldrick No. 8 Muslow, sec. 32-21-15. Drlg. 250 ft.

Midfield Oil Co. No. 2 Muslow, sec. 6-20-15. Drlg. 258 ft.

J. F. Mitchell No. 2 Muslow, sec. 31-21-15. Drlg. ch. rk. 1,320 ft.

Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. Set 6-in. csg. 2,185 ft.; P.B. 2,200 ft.; old T.D. 2,605 ft.; fsg. for lnr. 2,200 ft.; tstd. S.W.; W.O.

T. D. Sedberry No. 1 Stiles, sec. 22-21-16. Drlg. sh. 820 ft.

Triple M Oil Co. No. 1 Boisseau, sec. 34-21-16. S.D.; W.O. 1,925 ft.

G. H. Vaughn No. 1 Stiles, sec. 21-21-16. Set 6-in. csg. 1,016 ft.; tstd. dry; drlg. ch. rk. 1,585 ft.

Nat Weisman No. 1 Stiles, NE cor. sec. 27-21-16. Set 6⅝-in. csg. 1,032 ft.; T.D. 1,037 ft.; W.O.S.R. 1,037 ft.

Caldwell Parish

E. T. Oakes et al No. 1 Kyles, sec. 18-11-3e. Set 12-in. csg. 467 ft.; S.D.

Catahoula Parish

G. C. Foster et al No. 1 Peck, sec. 38-10-8e. S.D. 645 ft.

Claiborne Parish

Harry Fotiades No. 1 King, sec. 11-20-5. Drlg. sh. 2,698 ft.

Harry Fotiades No. 2 King, C NE NW sec. 11-20-5. Set 5½-in. csg. 5,209 ft.; tstg. 5,236 ft.; comp.; 10 B.P.H.; 20/64-in. ck.; T.P. 90 lbs.; set tbg. on pkr.; T.D. 5,236 ft.

M. J. Grogan No. 1 Whitman, C E½ NW NE sec. 2-20-15. Set 5½-in. csg. 5,173 ft.; T.D. 5,199 ft.; sat L. 5,179-87 ft. and 5,192-94 ft.

Gulf Oil Corp. No. 4 Patton, SW cor. NW sec. 11-20-5. Sat. 5,263-74 ft.; comp. 43 B.P.H.; 5½-in. csg. 5,271 ft.; T.D. 5,284 ft.

J. H. Henry et al No. 1 Tippett, sec. 33-21-4. Set 10¾-in. csg. 768 ft.

Hollifield & McFarland No. 1 Kilgore, C SE NE sec. 12-20-5. Drlg. L. 4,430 ft.

Lyons & Neely No. 1 Lowery, sec. 11-20-5. Drlg. 545 ft.

Magnolia Pet. Co. No. 2 Fowler, sec. 32-21-4. Drlg. 4,280 ft.

Magnolia Pet. Co. No. 2 Lloyd, sec. 2-20-5. Por. L. 5,282-97 ft.; set 7-in. csg. 5,282 ft.; comp.; 568 bbls. in 18 hrs.; ¾-in. ck.; T.P. 740 lbs.; C.P. 760 lbs.; T.D. 5,297 ft.

Magnolia Pet. Co. No. 3 Lloyd, C SW SE sec. 2-24-5. Drlg. sh.&L. 4,990 ft.

Morelock & Bevil No. 2 Kilgore, C NW NE sec. 12-20-5. Set 5½-in. csg. 5,368 ft.; comp.; 33 B.P.H.; ¾-in. ck.; T.P. 300 lbs.; tbg. set on pkr.; T.D. 5,402 ft.

Oakes et al No. 1 Kilgore, NE cor. SE sec. 28-21-15. D.S.T. 4,188-4,225 ft.; tstd. dry in 5 min.; set 5¾-in. csg. 5,290 ft.; T.D. 5,313 ft.; set perf. lnr.; tstd. dry; washed with oil and acdz.

E. T. Oakes et al No. 1 H. W. Patton, C NW SW sec. 12-20-5. Sat. L. 5,321-31 ft. and 5,333-46 ft.; set 5½-in. csg. 5,324 ft.; T.D. 5,331 ft.

R. P. Oden No. 1 Henry, C NE NE sec. 29-21-4. Sat. L. 5,122-25 ft. and 5,129-34 ft.; set 5½-in. csg. 5,121 ft.; comp.; 8 B.P.H.; ¼-in. ck.; T.P. 120 lbs.; T.D. 5,136 ft.

A. O. Olson No. 1 Kennedy, sec. 26-21-5. R.U.

Sells Pet. Co. No. 2-A Patton, C NE NE sec. 11-20-5. Drlg. L.&sh. 4,995 ft.

Skelly Oil Co. No. 1 Enlee, sec. 28-21-4. Set 5½-in. csg. 5,230 ft.; perf. 5,213-20 ft.; comp.; 308 B.P.D.; ⅝-in. ck.; T.P. 225 lbs.; C.P. 650 lbs.; T.D. 5,239 ft.

Sklar Oil Corp. No. 2 Kilgore, C NW SW sec. 11-20-5. Sat. L. 5,258-70 ft.; comp.; 66 B.P.H.; ¼-in. ck.; T.P. 150 lbs.; C.P. 600 lbs.; 5½-in. csg. 5,250 ft.; T.D. 5,271 ft.

Sloan & Zook Co. No. 1 Patton, C NW SW sec. 7-20-5. Set 5½-in. csg. 5,400 ft.; T.D. 5,405 ft.; comp.; 22 B.P.H.; open tbg.; T.P. 100 lbs.

Sloan & Zook No. 2 Patton, T.F., sec. 1-20-5. Set 10¾-in. csg. 843 ft.

Texas Co. No. 1 Tippett, sec. 33-21-4. Sat. L. 5,303-10 ft.; set 5-in. csg. 5,293 ft.; tsg. 5,318 ft.; W.O.S.R.

Union Prod. Co. No. 2 Brownfield, sec. 5-19-5. T.D. 10,759 ft.; hole off 5 deg. P.B. 10,500 ft.

G. H. Vaughn No. 1 English, C NW SW sec. 30-21-4. Sat. L. 5,078-86 ft.; 5½-in. csg. set 5,076 ft.; tstg. 5,091 ft.

Weaver Oil Corp. No. 2 Edmonds, sec. 16-20-5. T.D. 5,851 ft.; W.O.

Concordia Parish

Morrison & Co. No. 1 Winston, sec. 43-7-9e. S.D. 2,200 ft.

De Soto Parish

S. S. Alexander No. 1 Stoll, NE cor. sec. 5-12-16. O.W.W.O.; old T.D. 6,002 ft.; set short string 5½-in. csg. 5,479 ft. reperf. 5,420-40 ft.; tstg. S.W. 5,440 ft. cmtd. all perf. above 5,180 ft.; drld. out cmt. and perf. 5,420-44 ft.; set 2-in. tbg. with pkr. 5,360 ft.; tstg.; T.D. 5,453 ft.

Coleman et al No. 1 Franklin, NW cor. NE SE sec. 29-12-11. Drlg. sh. 1,910 ft.

Collins et al No. 1 Joiner, sec. 28-11-12. Fsg. for D.S.

La. Seaboard Oil Ref. Co. No. 1 Lawrence, sec. 36-12-14. Set 8¼-in. csg. 2,031 ft.; tstd. dry; T.A. 2,894 ft.

Pet. Heat & Power Co. No. 1-B Kavanaugh, sec. 12-11-12. O. sd. 2,804-05 and 2,812-16 ft.; set 5-in. csg. 2,817 ft.; perf. 2,800-14 ft.; comp.; pmpg. 5 B. P.D.; much wtr.; T.D. 2,817 ft.

Petroleum Heat & Power Co. No. 2 Kavanaugh, NE cor. NW SW sec. 7-11-11. Tstd. dry 2,874 ft.; W.O.

Pet. Heat & Power Co. No. 1 Rives, sec. 20-12-11. Tstd. dry 3,350 ft.; W.O.

Pet. Heat & Power ... 1 Williams, W R., NW NE sec. 13-11-12. (Cor.); D.S.T. 2,800-18 ft.; S.G.; 7-in. csg. set 2,800 ft.; tstg. 2,827 ft.; W.O.; T.D. 2,827 ft.; tstd. S.G.; S.D. 2,827 ft.

Grant Parish

C. R. Bowers No. 1 Harrison Est., sec. 21-8-5. R.U.; S.D.

C. L. Thompson No. 1 McNeely Est., NE cor. sec. 10-6-3w. Ran Schlumberger; T.D. sh. 4,518 ft.

Lincoln Parish

Harry Fotiades No. 1 Henry, C NW NE sec. 5-20-4. Set 5½-in. csg. 5,224 ft.; comp.; 12 B.P.H. on 15/64-in. ck.; T.P. 150 lbs.; C.P. 550 lbs.; T.D. 5,246 ft.

O K Oil Co. No. 1 Lowery, 1,980 ft. N L, 635 ft. W L, sec. 7-20-4. Drlg. sh.& L. 5,282 ft.

Natchitoches Parish

Roy Raines et al No. 1 Prudential Life Ins. Co., sec. 22-10-9w. Set 12-in. csg. 70 ft.; T.D. 1,250 ft.; fsg.

W. P. Ryan et al No. 1 Lambert, sec. 4-8-9. Top Bissm. sd. 2,952 ft.; D.S.T. 3,186-4,133 ft.; rec. 146 ft. mud in 28 min.; T.D. 4,133 ft.; S.D.

Red River Parish

Monte Oil Co. No. 1 McClelland, NW NW sec. 24-13-11. D.S.T. 967-74 ft. S.G.; D.S.T. 1,570-98 ft.; small S.G.; set 6-in. csg. 2,490 ft.; R.U. cable tool; sd. 2,530 ft., T.D.; W.O.S.R.

Sabine Parish

Hare et al No. 1 Stoby, SW cor. SE sec. 10-8-12. R.U.

Hunter Co. No. 3 Bowman-Hicks, sec. 15-7-13. Acdzd.; tstd. dry; S.O. 2,550 ft.; W.O.S.R.

Hunter Co. No. 4 Bowman Hicks, sec. 13-7-13. R.U.

F. B. King No. 1 Sabine Lbr. Co., sec. 19-7-13. Drlg. 300 ft.

W. L. McClanahan No. 1 Frost Lbr. Co., sec. 22-9-13. Arng. to core 3,032 ft.

Major Oil Co. No. 1 Bowman-Hicks Lbr. Co., sec. 7-7-12. Set 7-in. csg. 2,330 ft.

F. W. Martin Drlg. Co. No. 1 Sabine Lbr. Co., C W½ NE NE sec. 26-7-14. T.D. 4,500 ft.; Arng. run elec. survey.

Plymouth Oil Corp. No. 1 Kezerle, sec. 3-7-13. Tstd. S.W. 2,494 ft.; S.D.

W. L. Posey No. 1-A Ramirez, sec. 12-7-13. Set 6-in. at 2,147 ft.; tstd. dry 2,535 ft.; drlg. sh. 2,612 ft.

Albert Reich No. 1 Giaque, 330 ft. NE cor. SE NE sec. 27-7-14. Drlg. sh. 1,210 ft.

J. J. Watson No. 1 Sabine, sec. 12-7-13. Set 6-in. csg. 2,145 ft.; W.O.S.R. 2,510 ft.

Lee Whitehurst No. 1 Bowman-Hicks Lbr. Co., C W½ SE SE sec. 14-7-14. T.D. 2,125 ft.; S.D.; W.O.

Tensas Parish

H. V. Schumacker No. 4 Mount Plantation, sec. 39-11-12e. S.D. 2,410 ft.

Union Parish

Standard Oil Co. of La. No. 1 Frost Lbr., sec. 14-21-1e. Cutting out stk. D.S. 9,640 ft.

Webster Parish

S. W. L. Backus No. 4 Pardee, sec. 3-22-11. D.S.T. 2,725-34 ft.; rec. 4 jts. oil and mud; T.D. 2,734 ft.; set 7-in. csg. 2,729 ft.

Fohs Oil Co. No. 1 Crichton, sec. 33-21-10. Top lower Mar. 7,980 ft.; drlg. sh. 8,318 ft.

Hunt Oil Co. No. 8 Babb, sec. 13-21-10. Drlg. L.&sh. 3,854 ft.

Hunt Oil Co. No. 1 Bodcaw, C SW NE sec. 33-21-10. Drlg. sh. 4,381 ft.

Hunt Oil Co. No. 9 Davis, sec. 14-21-10. Holloway sd. 5,610-75 ft.; set 9⅝-in. csg. 5,929 ft.; comp.; 64 B.P.H.; ¼-in. ck.;

T.P. 825 lbs.; C.P. 1,725 lbs.; T.D. 5,969 ft.

Hunt Oil Co. No. 2 Bodcaw, C NE SE sec. 33-21-10. Drlg. L.&sh. 3,695 ft.

Hunt Oil Co. No. 1 Davis, 660 ft. NE cor. sec. 23-21-10. Drlg. L.&sh. 4,055 ft.

Hunt Oil Co. No. 20 Hope, C NE NW sec. 24-21-10. Drlg. L.&sh. 4,110 ft.

Hunt Oil Co. No. 1 Pardee, sec. 24-21-10. R.U.

Hunt Oil Co. and Ray Drlg. Co. No. 1 Bodcaw, C NW NE sec. 33-21-10. Top Holloway sd. 5,748 ft.; comp.; 54 B.P.H. on ½-in. ck.; T.P. 350 lbs.; C.P. 750 lbs.; perf. csg. 5,730-65 ft.; 7-in. csg. 5,967 ft.; T.D. 6,013 ft.

Hunt Oil Co. No. 4 Webb, sec. 13-20-10. Set 13⅜-in. csg. 625 ft.

Magnolia Pet. Co. No. 1 Crichton Unit, sec. 33-21-10. Drlg. sd.&L. 6,314 ft.

Magnolia Pet. Co. No. 3 Crichton, 795 ft. N line, 763 ft. W line, sec. 33-21-10. Holloway sd. 5,794-5,803 ft.; set 7-in. csg. 5,794 ft.; T.D. 5,808 ft.

Magnolia Pet. Co. No. 1 Robbins Unit, sec. 21-21-10. Drlg. sh.&sd. 7,127 ft.

Midstates Oil Corp. No. 1 Weiori Lbr. Co., C NW NW sec. 3-20-10. Top Tr. Pk. 6,029 ft.; no Holloway sd.; set 9⅝-in. csg. 6,121 ft.; top lower Marine 8,072 ft.; drlg. sh. 8,332 ft.

Ohio Oil Co. No. 4 Cox. Acct. 2. C sw sec. 15-21-10. Set 9⅝-in. csg. 5,840 ft.; T.D. 5,881 ft.

Ohio Oil Co. No. 1 Gray, NW cor. SE NW sec. 28-21-10. Bodcaw sd. 8,301-48 ft.; 7-in. csg. 8,322 ft.; tstg.

Ohio Oil Co. No. 24 Gray, NE cor. sec. 35-21-10. Bodcaw sd. 8,164-8,215 ft.; set 7-in. csg. 8,170 ft.; tstg.; T.D. 8,223 ft. comp.; 341 B.P.D. dist.; est. 3,000,000 ft. gas; ⅝-in. ck.; T.P. 2,300 lbs.; C.P. 2,700 lbs.

Ohio Oil Co. No. 1 A. H. Gray, Acct. 3. sec. 26-21-10. Drlg. hd. sd. 7,442 ft.

Ohio Oil Co. No. 4 Holloway, sec. 23-21-10. Old gas well; old T.D. 4,537 ft.; drlg. sh.&L. 5,165 ft.

Ohio Oil Co. No. 1 Jackson, sec. 27-21-10. No Holloway sd.; set 9⅝-in. csg. 5,600 ft.; Bodcaw sd. 8,121-75 ft.; rng. 7-in. csg.; T.D. 8,189 ft.

Ohio Oil Co. No. 1 Sandlin, sec. 27-21-10. No Holloway sd.; set 9⅝-in. csg. 5,574 ft.; top Bodcaw 8,097-8,148 ft.; set 7-in. csg. 8,100 ft.; comp.; 389 B.P.D. dist. and est. 4,000,000 ft. gas; ⅜-in. ck.; C.P. 2,500 lbs.; T.P. 2,400 lbs.; T.D. 8,153 ft.

Ohio Oil Co. and Union Prod. Co. No. 1 Tillman-Gleason, sec. 28-21-10. Drlg. sdy. sh. 7,012 ft.

A. G. Oliphant No. 2 Hodges, C NW SE sec. 34-21-10. 9⅝-in. csg. 5,689 ft. tstd. dry 5,859 ft.; drlg. hd. sd. 7,623 ft.

Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. "D" stringer 8,473-98 ft.; Bodcaw sd. 8,565 ft.; cg. shly. sd. 8,606 ft.; set 5½-in. csg. 8,607 ft.; T.D. 8,642 ft.; on 45-min. test flwd. 98 bbls. oil with gas at est. rate of 750,000 ft. per day through 2-in. flow line from csg.; C.P. 450 lbs.; T.P. 480 lbs.; flwd. 118 bbls. in 3 hrs. on ¼-in. ck. through csg.; C.P. 890 lbs.; T.P. 0; tbg. plugged; will kill and pull tbg. to rerun.

Union Prod. Co. No. 1 Josey, sec. 27-21-10. Drlg. rd. bds. 6,725 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, sec. 67-12s-3e. R.U.

Continental Oil Co. No. 1 Hebert, sec. 67-12s-3e. 10¾-in. csg. 1,510 ft.; T.D. 7,448 ft.; D.S. stk.; fsg.; P.B. 7,301 ft.; to sdtrk.; T.D. 9,501 ft.; P.B. 8,100 ft. 5¾-in. csg. 7,875 ft.; perf. 7,866-68 ft.; washing with oil to test.

Anse La Butte—St. Martin Parish

Butte Oil Co. No. 2 Billeaud, sec. 117-9s-5e. Drlg. sd.&gvl. 604 ft.

Paul Fly et al No. 1 Moresi, sec. 118-9s-5e. T.D. 1,153 ft.; 7-in. csg. 1,128 ft.; pmpg. 40 B.P.D.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, sec. 21-16s-12e. T.D. 2,309 ft.; run 13⅜-in. csg.

Baton Rouge—East Baton Rouge Parish

Wm. Helis No. 2 Duplantier, sec. 65-7s-1w. Cd. sh.&hd. sd.; showed oil 6,454-65 ft.; cg. sh. 6,471 ft.

Wm. Helis No. 1 Harry Nelson, sec. 36-7s-1w. Drlg. sh.&L. 5,822 ft.

Bay St. Elaine—Terrebonne Parish

F. L. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 6 Wilbert Sons Lbr. Co., sec. 66-9s-11e. 7-in. csg. 6,982 ft.; drlg. sh. 7,233 ft.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,010 ft.; T.D. of sdtrkd. hole 5,421 ft.

Amerada Pet. Corp. No. 4 State, sec. 13-15s-20e. 13⅜-in. csg. 1,976 ft.; 9⅝-in. csg. 8,156 ft.; drlg. sh. 8,527 ft.

Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. 13⅜-in. csg. 2,123 ft.; drlg. sdy. sh. 4,570 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 29 State, sec. 17-23s-20e. Loc.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,788 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack; T.D. 2,959 ft.; flwd. oil and went dead; R.U. to pmp.

Burton-Sutton Oil Co. No. 24 School Ld., sec. 16-14s-13w. Drlg. sh.&L. 3,208 ft.

Burton-Sutton Oil Co. No. 25 School Ld., sec. 16-14s-13w. Drlg. sd. 5,585 ft.

Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. T.D. 4,242 ft.; 9⅝-in. csg. 4,242 ft.; perf. csg. 4,221-30 ft.; flwg. P.L. oil; went dead; P.B. 4,232 ft.; drld. out to T.D. 4,321 perf. csg. 4,300-12 ft.; flwd. dry gas; killed to pull screen and lnr.

Cheneyville—Rapides Parish

Amerada Pet. Corp. No. 5 Well Ld. Co., sec. 53-1s-2e. T.D. 5,990 ft.; rmg.

Texas Co. No. 3 Well Ld. Co., sec. 53-1s-2e. Drlg. sh. 7,630 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 2-B Ecuer, sec. 11-13s-9e. T.D. 1,899 ft.; 7-in. csg. 1,883 ft.

Pan American Prod. Co. No. 8 Laws Realty, sec. 25-13s-9e. T.D. 2,651 ft.; P.B. 2,621 ft.; I.P. 540 B.P.D.; 7/32-in. ck.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 2 State. Gulf of Mexico. Drlg. sd.&sh. 4,130 ft.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 2,150 ft.; S.D.

Humble O. & R. Co. No. 18 Community, sec. 30-10s-2e. T.D. 6,958 ft.; 7-in. csg. 6,975 ft.

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 6 Dog Lake, sec. 5-22s-16e. Drlg. sd.&L. 3,901 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 10 State, sec. 24-21s-16e. Drk.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, sec. 40-17s-15e. Drlg. sd. 725 ft.

Shell Pet. Corp. No. 6 Pellican, sec. 20-17s-15e. Drlg. sdy. sh. 5,329 ft.

Fausse Point—Iberia Parish

Texas Co. No. 4 State, sec. 35-11s-8e. 18⅝-in. csg. 90 ft.; top sd. 7,912 ft.; top salt 6,595 ft.; T.D. 9,246 ft.; 7⅝-in. csg. 9,236 ft.; T.D. 9,435 ft.; 5½-in. csg. 9,345 ft.; perf. csg. 9,251-61 ft. made sqz. job; P. B. 9,261 ft.; perf. csg. 7,910-35 ft.; swbd. wash wtr.; S. S.O.; reperf. csg. 7,935-9,000 ft.; tstg.

Garden Island—Plaquemines Parish

Texas Co. No. 29 State, sec. 38-23s-33e. Cg. sd. 5,865 ft.

Hackberry—Cameron Parish

W. T. Burton No. 1 Duhon, sec. 29-12s-10w. R.U.

W. T. Burton No. 1 F. Lacy, sec. 22-12s-10w. T.D. 3,683 ft.; 7-in. csg. 3,462 ft.

Darryl Davis No. 1 Bickford, sec. 39-12s-10w. R.U.

Gulf Oil Corp. No. 1 Noble, sec. 22-12s-10w. Drlg. sd.&sh. 1,033 ft.

John Merrick No. 2 Vincent, sec. 28-12s-10w. Drk.

Stanolind O. & G. Co. No. 1 Kaugh, sec. 28-12s-10w. Drk.

Superior Oil Co. No. 2 Benson, sec. 30-12s-10w. Drlg. sh. 5,431 ft.

Sutton Oil Co. No. 5 Ellender, sec. 22-12s-10w. T.D. 3,267 ft.; I.P. 213 B.P.D.; ¼-in. ck.

Texas Co. No. 24-B State, sec. 12s-9w. T.D. 8,052 ft.; blew out; stk. D.S.; hole cleaned out to 7,659 ft.; P.B. 6,578 ft.; T.D. 6,686 ft.; P.B. to 6,480 ft.; to sdtrk.

Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. 7-in. csg. 4,876 ft.; T.D. 5,940 ft.; S.T.; T.D. 5,023 ft.; P.B. 5,000 ft.; sdtrkd. hole; T.D. 6,236 ft.; run 5-in. csg.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, sec. 37-17s-9e. R.U.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. T.D. 10,404 ft.; top brkn. sec. oil show 10,303 ft.; 7-in. csg. 10,404 ft.; perf. csg. 10,390-96 ft.; tstg.

Jennings—Acadia Parish

F. W. Bennett No. 2 Brethern, sec. 41-9s-2w. T.D. 7,392 ft.; 6⅝-in. csg. 7,392 ft.; perf. csg. 7,350-80 ft.

W. T. Burton No. 6 Roboria, sec. 41-9s-2w. Drlg. sh.&L. 5,378 ft.

Frio Oil Co. No. 1 Gulf fee, sec. 45-9s-2w. Drlg. sd.&sh. 6,813 ft.

Frio Oil Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. Drlg. sh. 6,672 ft.

Glassell & Glassell No. 5 Trushell, sec. 42-9s-2w. R.U.

T. G. Markley No. 1 Gulf Ld., sec. 45-9s-2w. T.D. 7,314 ft.; 7-in. csg. 7,276 ft.

W. S. Noble et al No. 1 Ed Prather, sec. 45-9s-2w. R.U.

Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,770 ft.; P. B. 1,055 ft.; to stdrk.; cd. oil sd. 1,760 ft.; R.U. to pmp.

Pet. Heat & Power Co. No. 2 Iowa-Jennings, sec. 45-9s-2w. Drlg. sh. 2,010 ft.

Pet. Heat & Power Co. No. 1 Smith, sec. 45-9s-2w. S.D. 1,156 ft.

Stanolind O. & G. Co. No. 112 Crowley Oil & Mineral Co., sec. 48-9s-2w. 10¾-in. csg. 1,395 ft.; drlg. sd. 4,927 ft.

Superior Oil Co. No. 4 Iowa-Jennings, sec. 41-9s-2w. Drlg. sdy. sh. 3,594 ft.

Superior Oil Co. No. 3 Jules Clement, sec. 46-9s-2w. T.D. 6,769 ft.; 7-in. csg. 6,734 ft.

Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. Drlg. sh. 7,021 ft.

Superior Oil Co. No. 14 Leckelt, sec. 42-9s-2w. T.D. 7,470 ft.; run 7-in. csg.

Victor Weisse No. 1 Clement, sec. 46-9s-2w. 6⅝-in. csg. 3,032 ft.; T.D. 3,255 ft.; fsg. for tbg.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien Adams, sec. 9-17s-24e. Dredge canal.

Texas Co. No. 11 Lafitte, sec. 19-17s-24e. Drlg. sh. 2,563 ft.

Texas Co. No. 1-B Madison, sec. 19-17s-24e. T.D. 10,226 ft.; 7⅝-in. csg. 10,206 ft.; perf. csg. 10,000-52 ft.; I.P. 175 bbls. P.L.O. per day; ⅝-in. ck.

Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. R.U.

Texas Co. No. 9 Rigolet-Cooperation Fur Co., sec. 29-17s-24e. Cd. oil sd. 10,106-11 ft.; T.D. 10,214 ft.; D.S. stk. at 8,034 ft.; shot at 7,099 ft.; recvd. D.S.; 7⅝-in. csg. 10,188 ft.; perf. csg. 10,098-10,122 ft.; I.P. 862 B.P.D.; ⅝-in. ck.

Lake Barre—Terrebonne Parish

Texas Co. No. 16 State, sec. 32-21s-19e. T.D. 4,280 ft.; P.B. 2,734 ft.; drlg. L. 2,798 ft.

Texas Co. No. 42 State-Lake, sec. 40-21s-19e. 9⅝-in. csg. 6,678 ft.; drlg. rk. 7,012 ft.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 4 State, sec. 64-17s-19e. 10¾-in. csg. 2,707 ft.; T.D. 10,239 ft.; 7-in. csg. 10,239 ft.; T.D. 10,437 ft.; set 5-in. lnr. on bttm.; perf. csg. 10,416-20 ft.; tstg.

Lake Pelto—Terrebonne Parish

Texas Co. No. 19 State-Lake Pelto, sec. 17-23s-18e. T.D. 6,315 ft.; stk. D.S.; sdtrkd.; cg. oil sd. 6,241 ft.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, sec. 35-21s-22e. Drlg. sd.&sh. 2,730 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Wurzlow, sec. 32-19s-19e. Top sd. S.G. 8,423 ft.; T.D. 8,566 ft.; 9⅝-in. csg. 8,521 ft.; found split csg. 7,063-73 ft.; found cmt. inside of D.S.; washing over stuck D.S.

Union Prod. Co. No. 1 Fundenburk, Unit 1, sec. 50-19s-19e. T.D. 11,933 ft.

Lockport—Calcasieu Parish

Continental Oil Co. No. 1 J. H. Moss, sec. 8-10s-9w. 10¾-in. csg. 986 ft.; T.D. 6,737 ft.; rmg.

New Iberia—Iberia Parish

Canal Oil Co. No. 10 Bernard, sec. 54-12s-7e. T.D. 4,138 ft.; P.B. 3,775 ft.

H. Fotiades No. 6 Gulf Ld., sec. 25-12s-7e. T.D. 4,571 ft.; 7-in. csg. 4,520 ft.

Wm. Helis No. 5 Bolivar, sec. 56-12s-7. T.D. 4,337 ft.; salt; P.B. and sdtrkd.; T.D. 3,594 ft.; 7-in. csg. 3,100 ft.; made sqz. job 3,070-60 ft.; P.B.; drlg. out to 3,145 ft.; swbd. dry; pig. scrn.; P.B. 3,170 ft.; W.O.S.R.

Wm. Helis No. 7 Bullock and Burke, sec. 25-12s-7e. Drlg. sh.&L. 4,634 ft.

Texas Co. No. 4 Bryant, sec. 25-12s-7e. T.D. 5,054 ft.; 7-in. csg. 5,039 ft.; perf. csg. 4,310-45 ft.; W.O.S.R.

Texas Co. No. 2 Burke, sec. 56-12s-7e. Drlg. sh. 6,466 ft.

Texas Co. No. 7 Duke, sec. 26-12s-7e. T.D. 5,337 ft.; drlg. by fish.

Texas Co. No. 2 Schwing, sec. 71-12s-7e. Bldg. drk.

Texas Co. No. 4 Grelino, sec. 25-12s-7e. 10¾-in. csg. 779 ft.; W.O.C.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 3 Federal Ld. Bnk., sec. 34-8s-1e. Drlg. sh.&L. 8,530 ft.

Port Barre—St. Landry Parish

Emerson Oil Co. No. 5 Sibille Oil Co., sec. 20-6s-5e. T.D. 3,475 ft; 5-in. csg. 3,470 ft.; tstd. S.W.; P.B. 3,432 ft.; tstd. S.W.; perf. csg. 3,405-22 ft.; W. O.S.R.

T. C. Markley No. 1 Lahaye, sec. 4-6s-5e. Drlg. sh. 4,432 ft.

Pan American Prod. Co. No. 1 Lahaye, sec. 4-6s-5e. Cg. sdy. sh. 5,201 ft.

Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. T.D. 1,000 ft.; S.D.

Texas Co. No. 22 Botney Bay Lbr. Co., sec. 4-6s-5e. T.D. 3,569 ft.; P.B. 3,434 ft.; set csg. 3,434 ft.; perf. csg. 3,370-3,400 ft.; pmpg. S.W.; tstg.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 36 Orleans Lve. Bd., sec. 14-18s-15e. Drlg. sd. 7,200 ft.

Quarantine Bay—Plaquemines Parish

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 5,700 ft.; 9⅝-in. csg. 5,560 ft.; oil sd. 9,228-29 ft., 9,234-36 ft. and 9,617-18 ft.; oil and gas shows 9,617-94 ft.; top sd. oil show 10,079 ft.; drlg. sh. 10,345 ft.

Gulf Ref. Co. No. 5 State, sec. 17-19s-17e. Loc.

Gulf Ref. Co. No. 6 State, sec. 17-19s-17e. Driving piling.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; drlg. sh. 10,311 ft.

Amerada Pet. Corp. No. 2 South Coast Corp., sec. 35-15s-19e. 11¾-in. csg. 2,666 ft.; drlg. sh. 10,238 ft.

Tide Water Asso. Oil Co. No. 1 South Coast Corp., sec. 33-15s-19e. R.U.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 11 United Ld. Co., sec. 15-10s-4e. 10¾-in. csg. 308 ft.; drlg. sd. 1,357 ft.

Sorrento Pet. Corp. No. 2 White, sec. 22-10s-4e. Drk.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, sec. 36-10s-4w. T.D. 9,520 ft.

Union Sulphur Co. No. 2 T. R. S. Farms, sec. 23-10s-4w. Drlg. sh. 7,972 ft.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s-12w. Drlg. salt 4,068 ft.

J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 19-9s-12w. Top salt 2,270 ft.; S.D.; 2,273 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 861 fee, sec. 29-9s-10w. T.D. 3,780 ft.; 7-in. csg. 3,775 ft.; failed to flow; perf. csg. 3,550-60 ft.; I.P. 60 B.P.D.; pmpg.

Union Sulphur Co. No. 863 fee, sec. 29-9s-10w. Drlg. rk. 2,742 ft.

Timbalier Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; twisted off drill collar; sdtrkd. jnk.; cd. sd. 5,332-36 ft.; tstd. 3 stands drlg. mud, oil and sd.; cd. oil sd. 5,336-43 ft.; drlg. sdy. sh. 6,869 ft.

Valentine—Lafourche Parish

Wm. Helis No. 2 Valentine Sugar, sec. 3-17s-20e. Drlg. sh. 6,286 ft.

Pan American Prod. Co. No. 2-B Community, sec. 58-17s-20e. T.D. 9,328 ft.; D.S. stk.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 8 Manhattan Ld. & Fruit Co., sec. 26-21s-30e. 24-in. csg. 91 ft.

Villa Platte—Evangeline Parish

Amerada Pet. Corp. No. 1 A. Fournier, sec. 44-3s-2e. Cg. sh. 8,933 ft.

Continental Oil Co. No. 1 Ludeau, sec. 45-3s-2e. Oil sd. 9,007-68 ft.; T.D. 9,070 ft.; I.P. 520 B.P.D.; ¼-in. ck.

Continental Oil Co. No. 1 Oscar Pitre, sec. 44-3s-2e. Drlg. sh. 6,264 ft.

Continental Oil Co. No. 1 Opelousas, St. Landry, sec. 44-3s-2e. Drk.

Continental Oil Co. No. 1 Tate & McDaniel, sec. 44-3s-2e. Drlg. sh. 1,810 ft.

Continental Oil Co. No. 1 J. E. Vidrine, sec. 47-3s-2e. Drlg. sh.; T.D. 10,506 ft.; cmtd. bttm. of hole with cmt.

Continental Oil Co. No. 1 J. E. Vidrine, sec. 46-3s-2e. Drlg. sh. 8,575 ft.

Vinton—Calcasieu Parish

J. B. Reddich No. 3 Vincent, sec. 34-10s-12w. Loc.

Welsh—Jeff Davis Parish

A. V. Peters No. 3 fee, sec. 22-9s-5w. T.D. 1,020 ft.; 6⅝-in. csg. 950 ft.; stk. bailer; S.D.

Stanolind O. & G. Co. No. 2 Conover, sec. 20-9s-5w. T.D. 7,353 ft.; well tried to blow out; stk. D.S.; washing over stk. D.S.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 3 Calcasieu Natl. Bnk., sec. 1-9s-6w. Drlg. sd. 8,112 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft.; T.D. 3,925 ft.; D.S. stk.; T.A.

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; S.D. 6,021 ft.; prep. to resume drlg.

Calcasieu Parish

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., sec. 1-8s-13w. Drlg. sd.&sh. 9,126 ft.

Republic Prod. Co. No. 1 Sabine Tram, sec. 25-8s-14w. Old T.D. 9,620 ft.; fsg. for stk. D.S.

Union Sulphur Co. No. 1 Drew-Manuel, sec. 4-10s-11w. Drlg. sh. 1,814 ft.

Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.

Cameron Parish

Humble O. & R. Co. No. 1 K. B. Hanzen, 466 ft. S and E, NW cor. SW¼ sec. 9-12s-6w. Run 13⅜-in. csg. 2,703 ft.; drlg. sh.&L. 7,125 ft.

Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. 13⅜-in. csg. 2,150 ft.; T.D. 10,895 ft.; abd.

Pure Oil Co. No. 1 Calcasieu Natl. Bnk., sec. 18-12s-4w. Drlg. sd. 403 ft.

Ash, Robinson No. 1 Mermentau Mineral Ld. Co., sec. 30-14s-6w. 10¾-in. csg. 910 ft.

Superior Oil Co. No. 1 Sells, sec. 5-15s-8w. T.D. 6,350 ft.; 10¾-in. csg. 6,350 ft.; T.D. 9,551 ft.; fsg.

Iberia Parish

Texas Co. No. 1 Bayless-Jones, sec. 58-12s-5e. T.D. 8,250 ft.; 9⅝-in. csg. 8,242 ft.; top salt 8,683 ft.; T.D. 9,031 ft. P.B. 8,063 ft.; perf. csg. 8,170-8,210 ft.; flwg. 600 bbls. P.L.O. per day; 10/64-in. ck.; T.P. 1,560 lbs.

Texas Co. No. 1 State Lake-Peigneur, Twp. 12s-5e. Driving piling.

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd. at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.; T.D. 7,623 ft.; P.B. 7,-

176 ft.; to sdtrk.; T.D. 7,348 ft.; 9⅝-in. csg. 7,263 ft.; T.D. 9,667 ft.; set 2,990 ft. of 5¾-in. csg. 9,667 ft.; drld. plug to 9,667 ft.; well blew out; blowing dry gas.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. Drlg. sh. 4,690 ft.

Lafourche Parish

Sun Oil Co. No. 1 Dilbert Stark, Brown Cypress Co., sec. 70-15s-15e. R.U.
Texas Co. No. 1 La Terre, sec. 1-20s-21e. Drlg. sh. 3,419 ft.

Orleans Parish

W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. Drk.

Plaquemines Parish

Gulf Oil Corp. No. 1 Grand Prairie Lve Dist., sec. 6-20s-19e. Drlg. sdy. sh. 3,085 ft.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.

St. Bernard Parish

Gulf Ref. Co. No. 3 State Lake, Twp. 12s-15e. 13⅜-in. csg. 1,558 ft.; 9⅝-in. csg. 6,486 ft.; drlg. sdy. sh. 9,240 ft.

St. James Parish

Continental Oil Co. No. 1 Colonial Sugars Co., sec. 46-12s-5e. Drk.
Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. 18⅝-in. csg. 30± ft.; 13⅜-in. csg. 2,473 ft.; T.D. 6,501 ft.; T.D. 7,013 ft.; run 9⅝-in. csg.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, sec. 97-11s-7e. Drlg. 183 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Jeanerette Lbr. Co., sec. 14s-12e. Cg. sdy. sh.
Texas Co. No. 6 State Lake Mongoulois, sec. 10-10s-9e. R.U.
Texas Co. No. 11 St. Martin Ld. Co., sec. 21-8s-7e. Drlg. sd.&L. 6,918 ft.

St. Tammany Parish

Ozro B. Phillips No. 1 A. J. Planche, sec. 28-6s-10e. Drlg. shly. sd. 2,900 ft.

Terrebonne Parish

Barnsdall Oil Co. No. 1 R. R. Barrow, Inc., sec. 41-17s-18e. Drlg. 150 ft.
Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. Stk. 7-in. csg. at 11,684 ft.; T.D. 13,333 ft.; cmtd. 1,957 ft. of 5-in. csg. at 13,301 ft.; perf. csg. 13,254-66 ft.; C.O.; showing dist.; tstg.
Fohs Oil Co. No. 1 State, sec. 41-19s-19e. 18⅝-in. csg. 246 ft.; cd. sd. S.G. 6,894-9,226 ft.; T.D. 12,511 ft.; 7-in. csg. 12,215 ft.; drlg. sh. 12,617 ft.
Shell Pet. Corp. No. 1 Peters, sec. 73-18s-18e. Drlg. 2,249 ft.
Shell Pet. Corp. No. 1 Realty Operators, sec. 10-18s-16e. 13⅜-in. csg. 2,461 ft.; drlg. sh. 7,272 ft.
Texas Co. No. 1 State, Callau Island Bay, Twp. 23s-14e. Loc.

Vermilion Parish

Magnolia Pet. Co. No. 1 J. B. Ferguson, sec. 5-12s-2w. 13⅜-in. csg. 3,084 ft.; T.D. 9,144 ft.; P.B. 7,150 ft.; tstd. 8 lbs. press. and recvd. 1,530 ft. of fresh wtr.; S.D.

Vernon Parish

W. T. Burton No. 1 Gulf Lbr. Co., sec. 32-1n-6w. Loc.

ARKANSAS

Columbia County

Fohs Oil Co. No. 1 Phillips, C NW SW sec. 15-17-19. R.U.
Standard Oil Co. of La. No. 1 T. Crumpler, sec. 15-17-19. Drlg. sh.,sd.&bldrs. 518 ft.
G. H. Vaughn No. 1 Garrett, C NE SE sec. 14-17-20. R.U.

Hempstead County

H. D. Easton et al No. 1 LaGrone, sec. 5-12-26. T.A. 3,504 ft.

Lafayette County

Standard Oil Co. of La. No. 2 McKean, 660 ft. SW cor. SW SE sec. 7-16s-22w. Set 7-in. csg. 7,196 ft.; T.D. L. 7,257 ft.; tstg.

Little River County

M. E. Sanderson No. 1 Pinny; O.W.W.O.; reported abd. 1,300 ft.; NE cor. NE SW sec. 6-13-30. R.U. to D.D.
Joe G. Straham et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; drlg. rd.&gr. sh. 2,870 ft.

Lonoke County

J. F. Russell No. 1 Gunter, sec. 17-5n-10w. Drlg. 820 ft.

Miller County—Rodessa

F. W. Burford No. 1 E. B. Mitchell, SE cor. SW SW sec. 2-20-28. Drlg. L.&sh. 5,932 ft.
F. W. Buford No. 2 Mitchell, 330 ft. NW cor. NE NW sec. 11-20-28. Drlg. rd. bds. 4,416 ft.
F. F. Earles No. 1 General American Life Ins. Co., sec. 20-14-26. S.D. 1,232 ft.
Kroll & Travis No. 2 Dickinson, 330 ft. NW cor. SE NW sec. 11-20-28. Set 5-in. csg. 6,154 ft.; perf. csg. 6,124-44 ft.; tstg.; T.D. 6,171 ft.; comp.; 40 B. P.H.; ½-in. ck.; T.P. 280 lbs.; C.P. 500 lbs.
Red Iron Drlg. Co. No. 1 Mitchell, sec. 2-20-28. Sat L. 6,155-81 ft.; set 5½-in. csg. 6,155 ft.; T.D. 6,182 ft.; comp.; 18 B.P.H.; ⅝-in. ck.; T.P. 200 lbs.; C.P. 475 lbs.
Red River Valley Oil Co. No. 1 Beck, sec. 34-15-26. Set 10¾-in. csg. 128 ft.; S.D. fuel 1,450 ft.
Texarkana Drlg. Co. No. 1 Capps, sec. 10-20-28. Sat. L. 6,173-81 ft.; set 5½-in. csg. 6,160 ft.; T.D. 6,203 ft.; comp.; 258 B.P.D. on ⅝-in. ck.; C.P. 250 lbs.

Nevada County

B. L. Webb No. 1 Boswell, sec. 5-14-20. Set 10-in. csg. 63 ft.
Bruce E. Wallace No. 2 Haynie, SE cor. SE NE sec. 5-14-21. Sdy. sh. 1,194-1,204 ft.; tstd. inud, S.W. and oil 1,198-1,214 ft.; 30 min.; W.O.; T.D. 1,214 ft. set 6-in. csg. 1,198 ft.; swbd. est. 10 bbls. oil; W.O.S.R. 1,214 ft.

Pike County

Bruce E. Wallace No. 1 Tilyeu, sec. 26-8s-24w. S.D. 330 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, sec. 36-3n-11w. Set 12½-in. csg. 108 ft.
A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. T.D. 2,900 ft.; lost circ.; P.B. surf.; drlg. out cmt. 685 ft.

Union County—Schuler

R. T. Adams No. 1 F. W. Powledge, sec. 7-18-17. Drlg. sh.&shlls. 2,710 ft.
Alice Sydney Oil Co. No. 4 Powledge, SW cor. NW SE sec. 7-18-17. Drlg. rd. &gr. sh. 4,850 ft.
Atlantic Ref. Co. No. 1 Dumas, NW cor. NE NW sec. 21-18-17. Drlg. rd.&gr. sh. 6,141 ft.
E. M. Jones No. 3-A Murphy Ld. Co., NE cor. SE NE sec. 19-18-17. Drlg. rd.&gr. sh. 5,513 ft.
E. M. Jones No. 1 Rogers, SW SW sec 16-18-17. Top Jones sd. 7,570 ft.; cg. 7,612 ft.
Lion Oil Ref. Co. No. 1 Clarence, SW cor. Lot 7, SW sec. 7-18-17. Drlg. rd.&gr. sh. 5,585 ft.
Lion Oil Ref. Co. No. 1 Dee, sec. 17-18-17. Set 10¾-in. csg. 2,273 ft.; T.D. 2,300 ft.
Lion Oil Ref. Co. No. 1 Marvin, NE cor. Lot 7, SW sec. 7-18-17. Drlg. rd.&gr. sh. 5,862 ft.
Lion Oil Ref. Co. No. 3 Mayfield, sec 18-18-17. Top Jones sd. 7,552 ft.; top L. 7,659 ft.; set 7-in. csg. 7,611 ft.; T.D. 7,720 ft.
Lion Oil Ref. Co. No. 4 Mayfield, C Lot 3, NW sec. 18-18-17. Drlg. rd.&gr. sh. 6,510 ft.
Lion Oil Ref. Co. No. 5 Mayfield, sec. 18-18-17. 10¾-in. csg. 2,281 ft.; T.D. 2,300 ft.
Lion Oil Ref. Co. No. 6-B Edna Morgan, sec. 18-18-17. Drlg. rd.&gr. sh. 6,570 ft.
Lion Oil Ref. Co. No. 1 Nelson, sec. 18-18-17. Top Jones sd. 7,535 ft.; top L. 7,640 ft.; drlg. 7,692 ft.
Marine Oil Co. No. 1 Calloway, SE cor. Lot 4, NW sec. 18-18-17. Drlg. 3,585 ft.
Phillips Pet. Co. No. 3 Marks, C Lot 2 Top Jones sd. 7,504 ft.; top L. 7,608 ft.; set 7-in. csg. 7,784 ft.; T.D. 7,806 ft.
Phillips Pet. Co. No. 4 Marks, sec. 18-18-17. Set 10¾-in. csg. 2,265 ft.; T.D. 2,300 ft.
Roberts & Murphy No. 1 Justiss, 330 ft. SE cor. Lot 6, SW sec. 7-18-17. Set 10¾-in. csg. 1,771 ft.; drlg. rd. sh. 3,975 ft.

Union County—Other

Ark. Southern Oil Corp. No. 3-A Simmons, sec. 15-18-13. Set 7-in. csg. 2,222 ft.; T.D. 2,303 ft.
J. R. Lockhart No. 1 Raulston, sec. 12 17-14. Drlg. sh.&shlls. 2,520 ft.
Joe Modisette et al No. 2 Union Sawmill Co., sec. 8-18-12. R.U.
W. D. Wingfield, Tr. No. 2 Kidd Est., SE cor. NW SW sec. 15-18-13. Sd. S.D. 2,257-2,300 ft.; set 6-in. csg. 2,250 ft.; T.D. 2,300 ft.; W.O.S.R.

TEXAS

Week Ending June 18

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 7-A Wilkes and Smith, J. W. Hall Sur. No. 11. Drlg. sh.&L. 4,430 ft.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 7 J. E. Alexander, H.T.&B. Sur. No. 28. Drk
Humble O. & R. Co. No. 2 Pat O'Day, H.T.&B. Sur. No. 28. T.D. 6,050 ft.; W.O.C.
Stanolind O. & G. Co. No. 5-A W. H. Avitts, A.C.H.&B. Sur. No. 1. Drlg. sh. 3,430 ft.
Stanolind O. & G. Co. No. 3 Froberg, H. Stevens Sur. R.U.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 1 David Kaufman, C. Breen Sur. P.B. and sidetracked; drlg. sh. 10,210 ft.
Harrison & Abercrombie No. 1 I. N. Trover, Chas. Breen Sur. 9⅝-in. csg. 7,010 ft.; drlg. sh. 9,910 ft.
Harrison & Abercrombie No. 1 C. Larsen, Chas. Breen Sur. Drk.
Harrison & Abercrombie No. 1 West Texas Abst. Co., C. Breen Sur. Drlg. sh. 6,412 ft.

Pledger—Brazoria County

Danciger O. & R. Co. No. 1 Leona H. Carter, Grey & Moore Sur. T.D. 6,924 ft.; P.B. 6,838 ft.; perf. csg. 6,580-6,610 ft.; tstg.

West Columbia—Brazoria County

Adrian Moore No. 4 Gulf fee, G. Tennille Sur. Drlg. sh. 2,937 ft.
Frost & Dunman No. 1 Mary C. Masterson, G. Tennille Sur. Drlg. sh.&L. 1,890 ft.
Mike Hogg No. 2 Hogg, M. Varner Sur. Drlg. sh. 2,747 ft.
Merrick Oil Co. No. 2 T. L. Smith, G. Tennille Sur. Drk.
Sterling O. & R. Co. No. 1 H. Perry, G. Tennille Sur. Loc.; (corrected).
Sterling O. & R. Co. No. 2 Powers, G. Tennille Sur. T.D. 5,618 ft.; tstg.
Texas Co. No. 23 Abrams, G. Tennille Sur. T.D. 5,610 ft.; P.B. 5,542 ft.; tstg.
Texas Co. No. 24 Abrams, G. Tennille Sur. Drlg. sh. 2,410 ft.
Texas Co. No. 25 W. H. Abrams, G. Tennille Sur. Drk.
Texas Co. No. 3 Rebecca Goldman, G. Tennille Sur. R.U.
Texas Co. No. 5 Smith, G. Tennille Sur. T.D. 5,925 ft.; P.B. 5,627 ft.; 7-in. csg. 5,545 ft.

Cedar Point Field—Chambers County

Standard Oil Co. of Texas-Salt Dome Oil Corp. No. 1-94 State. R.U.

Seabreeze—Chambers County

Sun Oil Co. No. 4 Acom, sec. 103. R.U.
Sun Oil Co. No. 1-C White, T. Wells Sur. Cg. sh. 8,595 ft.

Greens Lake—Galveston County

Sun Oil Co. No. 2 Houston Farm Dev. Co., D. Buckley Sur. Spd.

Hitchcock—Galveston County

N. W. Hunter No. 1 Aarco Oil Co., J. Spillman Sur. Spd.

Bammel—Harris County

H. M. Harrell et al No. 1 Polley, C. G. McLean Sur. Drlg. sh. 6,205 ft.

Clear Lake—Harris County

West Prod. Co. No. 1 Dobie fee, W. M. Dobie Sur. Est. T.D. 5,810 ft.; comp.; no ga.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 1 Paul Weaver, Reels & Trobough Sur. Loc.

Eureka—Harris County

Jack Frazier No. 3 Varner Realty Co. J. Reinerman Sur. T.D. 7,762 ft.; 5½-in. csg. 7,762 ft.; perf. csg. 7,725-40 ft.; tstg.
J. Frazier No. 3 Vollmer-Neiman, J. Reinerman Sur. R.U.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Abd. loc.
Houston Oil Co. No. 1-D Laura Lackner, H. Reinerman Sur. R.U.
Means and McGee No. 1-A Laura Lackner, H. Reinerman Sur. Drlg. sh. 1,300 ft.
Tide Water Associated Oil Co. No. 1 Laura Lackner, J. Reinerman Sur. Cg. sdy. sh. 7,630 ft.

Fairbanks—Harris County

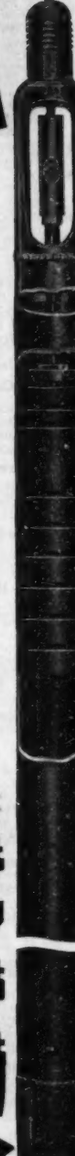
Amerada-Stanolind O. & G. Co. No. 2 F. Buillmore, G. Ayers Sur. Drk.
Amerada-Stanolind O. & G. Co. No. 1 P. E. Cougat, Geo. Ayers Sur. Drk.
Amerada-Stanolind O. & G. Co. No. 1 F. W. Farnsworth, J. Clarkson Sur. T.D. 6,855 ft.; 5½-in. csg. 6,854 ft.; perf. csg. 6,828-36 ft.; tstg.
Amerada-Stanolind O. & G. Co. No. 1 M. Korasz, G. Williams Sur. Loc.
Amerada-Stanolind O. & G. Co. No. 1 Nigteland Inv. Co., J. M. Dement Sur. T.D. 6,876 ft.; 5½-in. csg. 6,869 ft.
Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 C. W. Hahl, W. K. Hamblin Sur. T.D. 6,893 ft.; 5½-in. csg. 6,892 ft.; perf. csg. 6,730-40 ft.; flwg. oil and S.W.
Amerada-Stanolind O. & G. Co. No. 1 A. Sebek, W. K. Hamblen Sur. T.D.

THE WAY A MILLER CLEANS OUT

The way MILLER Sand Pumps *do the job* quickly at small cost, is the reason more MILLER'S are in use throughout the World, than all other sand pumps made.

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet.

5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.



INTERCHANGEABLE BOTTOMS
To Meet Every Condition

● BAILER BOTTOM
With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

● SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand hosts.

● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1445 COMPOSITE CATALOG

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General Offices and Shop, Box 4516
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FOR SALE BY SUPPLY STORES EVERYWHERE

6,853 ft.; perf. csg. 6,849½-52 ft.; flwd. 104 B.F.P.D., 50% S.W.

Amerada-Stanolind O. & G. Co. No. 1 J. F. Sebek, G. Williams Sur. Drlg. sh. 2,237 ft.

Amerada-Stanolind O. & G. Co. No. 1 E. H. Spaulding, J. Clarkson Sur. Drlg. sh. 1,235 ft.

Carroll Oil Co. No. 1 Ralph Johnston, J. N. Dement Sur. T.D. 6,864 ft.; perf. csg. 6,839-43 ft.; would not flow; S.D.

Gem Oil Co. No. 3 B. W. Reid, G. Ayers Sur. Drlg. 808 ft.

E. M. Halley No. 1 K. Fisher, A. Area Sur. T.D. 6,976 ft.; abd.

Housh-Thompson & Schofield No. 1 Ariola, Williams Sur. T.D. 6,841 ft.; W.O.C.

Showers & Moncrief No. 1 H. Ley, J. Waugh Sur. Drlg. sh. 1,530 ft.

Union Prod. Co. No. 1 Goodykoontz, W. S. Powell Sur. Cg. sh. 7,510 ft.

H. E. Williams and Thompson No. 1 M. Sterns, G. Williams Sur. T.D. 6,840 ft.; 5½-in. csg. on bttm.; perf. csg. 6,823-37 ft.; I.P. 373 bbls. in 12 hrs.; ¼-in. ck.

Windsor Oil Co. No. 1 O. F. Parker, J. Waugh Sur. Drlg. sh. 1,231 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 3 Cottingham, T. Choate Sur. Drlg. sh. 4,315 ft.

Humble O. & R. Co. No. 1 B. A. Grav. Perry & Austin Sur. T.D. 6,122 ft.; abd.

Humble O. & R. Co. No. 3 Herman Hospital, T. Choate Sur. Drlg.

Humble O. & R. Co. No. 1 Houston Dev. Co., D. Putnam Sur. Drlg. sh. 6,830 ft.

Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drlg.

Humble O. & R. Co. No. 1 J. D. Owens, T. Choate Sur. Drlg. sh. 4,430 ft.

Humble O. & R. Co. No. 1x 2-A Port City Ice Co., T. Choate Sur. Drlg.

Humble O. & R. Co. No. 1 E. E. Watson. Drlg.

Cordele—Jackson County

Magnolia Pet. Co. No. 1 S. E. Drushel, Sur. No. 18. Drlg.

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 2 McFaddin, S. A. Pace Sur. Cd. oil sd. 5,553 ft.; T.D. 8,158 ft.; circulating.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 5 J. H. Phelan, A. Stivers Sur. Bldg. drk.

Hardin—Liberty County

Amerada Pet. Corp. No. 1 J. H. Cessna, H. B. Johnston Sur. S.D. 2,000 ft.

Amerada Pet. Corp. No. 1 Lynott and Buffman, J. Robeson Sur. R.U.

Ark. Fuel Oil Co. No. 2 W. J. Green, A. B. Hardin Sur. 10¾-in. csg. 1,918 ft.

Atlantic Ref. Co. No. 2 J. F. Richaruson, A. B. Hardin Sur. R.U.

Geo. Echols-Shell Pet. Corp. No. 1 J. H. Cessna, H. B. Johnston Sur. Drlg. sh. 300 ft.

Gulf Oil Corp. No. 3-A J. C. Barfield, H. B. Johnston Sur. T.D. 7,661 ft.; 5-in. csg. on bttm.; reperf. csg.

Gulf Oil Corp. No. 3 J. H. Cessna, H. B. Johnston Sur. Drlg. sh. 3,495 ft.

Humble O. & R. Co. No. 1 M. H. Johnson, H. B. Johnston Sur. Loc.

Glen McCarthy No. 1 Oliver, H. B. Johnston Sur. Cg. sh. 7,710 ft.

Smith and McDannald No. 1 J. R. Rives, A. B. Hardin Sur. Drlg. sh. 4,080 ft.

Woodley Pet. Co. No. 1 Chambers, H. B. Johnston Sur. Drlg. sh. 2,080 ft.

Woodley Pet. Co. No. 1 Susan Wright, A. B. Hardin Sur. Drlg. sh. 1,722 ft.

Bay City—Matagorda County

Atlantic Ref. Co. No. 1 Gola. E. Hall Sur. Drlg. sh. 5,947 ft.

Hamman Expl. Co. No. 1 C. W. Badouh, E. Hall Sur. Loc.

Hamman Expl. Co. No. 1 S. A. Foote, E. Hall Sur. Drlg. 4,690 ft.

McCrosky—Matagorda County

Pierce Est. No. 3-A Pierce Est., D. Fenton Sur. Top oil sd. 6,585 ft.; T.D. 6,616 ft.; 5½-in. csg. 6,616 ft.; comp.; no ga.

Palacios—Matagorda County

Bennett Prod. Co. No. 1 Foley Ld. Co., L. Goodwin Sur. Cg. sh. 8,789 ft.

Sun Oil Co. No. 1 F. K. Robeson, L. Goodwin Sur. Drk.

Spurger—Tyler County

Republic Prod. Co. No. 10 Hurd, N. Hurd Sur. Drlg. sh. 6,517 ft.

GULF COAST WILDCATS

Brazoria County

Texas Co. No. 5 Freeport Sulphur Co., H. Burt Sur. Drlg. sd. 1,982 ft.

Burleson County

Red Bank Oil Co. No. 1 Coffield, E. Sante Sur. T.D. 6,173 ft.; R.U. to pmp.; fluid standing 5,000 ft.; pmpd. 132 bbls. fluid first 20 hrs., 90% oil, 10% S.W.; changing pmpg. equipment.

Calhoun County

W. L. Goldston No. 2 L. M. Foester, E. W. Lemuel Sur. 10¾-in. csg. 900 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Fort Bend County

Strake Pet. Corp. No. 1 G. L. Dew, D. Bright Sur. T.D. 6,410 ft.; P.B. and sdtrkd.; T.D. 6,350 ft.

Strake Pet. Co. No. 2 Sugarland Industries, Wm. Stafford Sur. T.D. 5,500 ft.; P.B. to sdtrk.; drlg. sh. 5,975 ft. in sdtrkd. hole.

Sam E. Wilson No. 1 Mt. Wood. Chas. Heywood Sur., C Lot 93. Spd. and S.D.

Galveston County

Sun Oil Co. No. 1 Atkins, Burrell Franks Sur. T.D. 7,364 ft.; abd.

Sun Oil Co. No. 1 Cade, A. Dickinson. 13⅜-in. csg. 2,218 ft.; T.D. 8,090 ft.; shot csg.; recvd. 3,400 ft.; P.B.; W.O.; may abd. or sdtrk.

Harris County

Commerce Oil Co. No. 1 Meaderbrook Dev. Co., J. R. Harris Sur. Loc.

J. Frazier No. 2 Houston Deepwater Ld. Co., Thos. Earle Sur. R.U.; prep. to spd.

O. W. Killam No. 1 M. A. Dodd, W.C. R.R. Sur., sec. 12. R.U.

Merit Oil Co. No. 1 Guy Smith, F. Rankin Sur. 10¾-in. csg. 1,266 ft.; T.D. 7,901 ft.; abd.

Jasper County

John Mayo No. 1 Cartwright, Legrande Sur. T.D. 2,000 ft.; W.O.C.

Jackson County

Magnolia Pet. Co. No. 1 West Ranch, Ramon Musquez Sur. T.D. 7,207 ft.; S.D.; 7-in. csg. 5,680 ft.; tstg.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two: S.D.; may abd.

Liberty County

Sun Oil Co. No. 1 Caroline Jordan, L. Gedruf Sur. R.U.

Matagorda County

J. K. Dorrance No. 1 M. Adamcik, I.&G. N. Sur. No. 1. T.D. 7,512 ft.; P.B. 3,500 ft.; sdtrkd.; T.D. 8,525 ft.; abd.

Sun Oil Co. No. 1 Fred Robbins, C. H. Vandeveer Sur. T.D. 10,160 ft.; well tried to blow out; 7-in. csg. 10,150 ft. perf. csg. 9,970-10,030 ft.; flwg. by hds.; went dead; reperf. csg. 9,430-9,520 ft.; made sqz. job; reperf. csg.: 9,315-60 ft.; tstg.; swbd. dry; pulling tbg.

Montgomery County

J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. R.U.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W. Abbey Sur. Drk.

Tyler County

Glenn H. McCarthy No. 1 J. A. McShane. B.B.B.&C. Sur. No. 13. T.D. 8,434 ft.; abd.

Waller County

David MacDaniel No. 1 O. M. Dinkins, L. Pearsall Sur. Drlg. sdy. sh. 3,910 ft. no report.

Stanolind O. & G. Co. No. 1 Freeman, H.T.&C. Sur. No. 99. Run 9⅝-in. csg; cg. sh. 10,112 ft.

Wharton County

Humble O. & R. Co. No. 1 J. D. Hudgins, Elizabeth McKenzie Sur. Drlg. sh. 2,300 ft.

Albert Plummer No. 2 M. Sorrell, S. F. Austin Sur. R.U.

S. W. TEXAS WILDCATS

Atascosa County

Altgell Mason No. 1 Vanegar. Francisco De La Garza Sur. S.D. 2,780 ft.; cd. sat. Serp. 2,738-80 ft.

Bastrop County

R. C. Franklin No. 2 Yarrington. Jose Manuel Bangs Sur. Drlg. 1,010 ft.

Ralph Ogden No. 1 Storey, Henry Warnell Sur. T.D. 1,773 ft., chk.; 5½-in. csg. 1,653 ft.; swbd. dry; R.U. to pmp.; hole full oil; pmpg. 1 B.F.P.H.

Oscar Raez No. 1 Walters, Michael Grun Sur. Drlg. sh. 1,640 ft.; no report.

Walden Oil Co. No. 1 Callahan, Andrew Mays Sur. No. 19. T.D. 2,714 ft.; abd.

Walden Oil Co. No. 1 Graham, Andrew Mays Sur. No. 19. Drk.

Bexar County

Fain-Harrison and Jenkins No. 1 Hansen, John Christopher Sur. Drk.

Nami Herman No. 1 W. F. Fields, A. Bustillos Sur. T.D. 737 ft.; 5⅛-in. csg. on bttm.; prep. to D.D.

Brooks County

Atlantic Ref. Co. No. 1 Mestena O. & G. Co., Las Mestenas Gr. Cg. sh. 2,326 ft.

Caldwell County

Banke Miller Oil Co. No. 1 Martindale, Hector McNeil Sur. Drlg. 2,969 ft.

Jan Oil Co. No. 1 Chew, J. McCoy Sur. T.D. 2,022 ft.; 5½-in. csg. 1,930 ft.; S.D.

Mencill Pet. Co. No. 1 J. Wallinger, Gedeon Pace Sur. Drlg. 1,520 ft.

C. R. Richardson No. 1 Schowe, T. Maxwell Sur., Abst. 188. S.D. 940 ft.

E. E. Whittington No. 1 Gilmer, H. C. Williams Sur. Drlg. sh. 1,342 ft.; no report.

F. W. Shield No. 1 Walker, Pablo Martinez Sur. No. 9. T.D. 1,335 ft.; Serp.; swbg. 2 B.O.P.H.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irrig. Co. Sur. 30. Drk.

De Witt County

Marjo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. Spd.

Duval County

Costa Oil Co. No. 1 Palacios, J. Poitevent Sur. No. 3. 10¾-in. csg. 194 ft.; T.D. 4,518 ft.; abd.

N. V. Duncan No. 1 Neelev. R. F. Neeley Sur. No. 284. T.D. 2,020 ft.; abd.

James Foster No. 1 Foster, B.S.&F. Sur. No. 268. Spd.

Frank Gravis No. 1 Megargal, J. Boyles Sur. 10-in. csg. 500 ft.; S.D.; T.A.

Humble O. & R. Co. No. 1 Harvey and Henderson Sur. 386. Drk.

W. C. McBride No. 1 Murphy, J. C. King Sur. No. 120. Drlg. 150 ft.

Rowan & Hope No. 1 Cuellar, B.B.B.& C. Sur., sec. 96. 10¾-in. csg. 198 ft.; made 15-min. D.S.T. 5,100-36 ft.; tstd. 49 lbs. press.; 500 ft. oil and 120 ft. S.W.; T.D. 5,509 ft.; 7-in. csg. 5,493 ft.; perf. csg. 5,405-10 ft.; tstd. S.W.: 135 lbs. W.P.; perf. csg. 5,109-20 ft.; showing S.W. and oil; tstg.

Standard Oil Co. of Texas No. 1 Dolores Garcia Sur. 16-in. csg. 1,015 ft.; S.D. 2,691 ft.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

F. L. Thompson No. 1 Davis, G.B.&C.N. G. Sur. No. 1. Cd. oil sd. 3,722-59 ft.; S.D. 5,086-5,112 ft. of sat. chk. logged at 4,964-76 ft.

Goliad County

Bunte Prod. Co. No. 1 Crews, Maria Jesusa DeLeon Sur. Spd.

Gonzales County

Heard-Hall & Young No. 1 Clark, Robt. S. Armistead Sur. Spd. and S.D.

Guadalupe County

Benstrasser No. 1 Eickenroht, A. Marrs Esnaurrezar Sur. R.U.

J. E. Clark No. 2 Anderson, Green DeWitt Sur. No. 11. Drlg. 980 ft.

Hidalgo County

Ralph Fair No. 1 Lynn, Juan Jose Hinojosa Sur. Drlg. sh. 2,910 ft.

Hidalgo Prod. Co. No. 1 Daskam Corp., Porc. 45, Blk. 34. T.D. 3,296 ft.; D.S. stk.; pulled drk. in; S.D.

Jim Hogg County

Humble O. & R. Co. No. 1 Anna Kelsy Bass, San Rafel Gr. 10¾-in. csg. 1,207 ft.; drlg. sh. 6,416 ft.

Jim Wells County

E. Calloway et al No. 1 E. O. Cook, Lavaca Grant Sur. S.D. 4,120 ft.

Humble O. & R. Co. No. 1 Tarrant, J. Poitevent Sur. Drlg. sh. 6,369 ft.

Magnolia Pet. Co. No. 1 Valades Hrs., La Anima Sola Gr. T.D. 6,210 ft.; well tried to blow out.

Mills Bennett Prod. Co. No. 1 W. R. Perkins, Lavaca Gr. Drlg. sh. 3,065 ft.

Rehmet & Wolcott No. 1 Balzon, I.&G. N. R.R. Sur., sec. 142, C Lot 27. Drk.

Southern Minerals Oil Corp. No. 1 J. R. Trussells, Lavaca Gr. 10¾-in. csg. 540 ft.; S.D. 4,000 ft.

Kendall County

Geo. Dorsey No. 1 Flanagan, J. Sweeney Sur. No. 12. Drk.

Kerr County

Edminston No. 1 Saul, Sur. 47. S.D. 55 ft.

H. C. Starkey No. 1-A Saue, T.W.N.G. R.R. Sur. S.D. 190 ft.

Kimble County

C. A. Dawson et al No. 1 Wilkinson, Brook and Burleson Part., B.S.&F. Sur. No. 23. T.D. 1,816 ft.; P.B. and sdtrkd.; drlg. sh. 1,710 ft.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528. 18⅝-in. csg. 198 ft.; drlg. sh. 5,225 ft.

La Salle County

Finley S. Ewing No. 1 Pugh, E. L. Garrett Sur. S.D. 780 ft.

Eugene Garner No. 1 Yeager, Lot 6, Wallace Subd. of Sur. No. 39. Drlg. sd. 1,412 ft.; no report.

Lee County

Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. T.D. 4,398 ft.; prep. to resume drlg.

Live Oak County

J. K. Adair No. 1 Schultz Live Stock Co., Wm. J. Pierce Sur. Spd.

J. B. Chew No. 1 Cartwright, J. Poitevent Sur. No. 1. Drlg. sh. 4,210 ft.

Fant City Oil Co. No. 1 Alamo Lbr. Co., Rafel Alcantora Sur. No. 26. Cg. sh. 1,268 ft.

R. H. Feltner No. 1 Reed, I.&G.N. R.R. Sur. 15. R.U.

Holland Oil Co. No. 1 West Est., C. Q. Ragland Sur. 10¾-in. csg. 189 ft.; S.D. 202 ft.; M.I. heavy rig.

V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. T.D. 210 ft.

Stewart Oil Co. No. 1 Nations, C Lots 792-793. Cg. sdy. sh. 1,723 ft.

McMullen County

Boysen and Young No. 2 Nueces Ld. & Live Stock Co., S. M. Williams Sur. T.D. 1,510 ft.; abd.

N. V. Duncan No. 1 Nueces Ld. & Livestock Co., B.S.&F. Sur. No. 119. T.D. 1,191 ft.; tstg.

Heard-Hall and Young No. 1-A Byrne. Geo. Pittuck Sur. No. 7. Loc.

S. M. Nesser No. 1 Franklin, J. Poitevent Sur. No. 33. Loc.

G. G. Newton No. 1 Bryne, Geo. Pettuck Sur. S.D. 977 ft.

C. C. Shumway No. 13 Shiner, sec. 52, Shiner Ranch Subd. Loc.

Wine Brenner No. 2 Teal, Wm. Kuykendall Sur. No. 41. Drlg. 80 ft.; no report.

Medina County

F. A. Brown No. 1 Senne, A.C.H.&B. Sur. 105. Logged 8 ft. of sat. oil sd. 802-11 ft.; (corrected); T.D. 903 ft.; 6⅝-in. csg. 805 ft.

J. W. Cromwell No. 1 J. W. Tondre, I. J. Rogers Sur. T.D. 930 ft.; fsg.

D. K. J. Oil Co. No. 1 Burrell. T.D. 2,039 ft.; S.D. after swbg. dry.

Gee Hayes et al No. 1 Conrad, J. Keppler Sur. S.D. 575 ft.

Geo. Hayes and Tarver No. 1 Mann, J. H. Isbell Sur. No. 10. Drlg. 110 ft.

Schweirs et al No. 1 Schmidt, J. Brieden Sur. No. 273. Drlg. 1,012 ft.

R. Q. Stivers No. 1 Jungman, N. B. Rogers Sur. No. 33. R.U.

Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. Drlg. sh. 515 ft.; no report.

M. L. Walker No. 1 Zuberbulen, A. Bonamy Sur. R.U.; S.D.

Ziegler et al No. 1 Wiemers, F. Thurmm Sur. Loc.

Milam County

Clark & Morgan No. 1 Johnson. Juan Jose Acosta Sur. S.D. 1,690 ft.

Texedo Oil Co. No. 1 Graham, Charles Cornea Sur. Logged S.O. 1,135-36 ft.; T.D. 1,808 ft.; fsg. for tbg.

Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.; C.O. set 7-in. csg. 1,167 ft.; drlg. sh.&clk. 1,515 ft.

Western Gulf Pet. Co. No. 1 Batte, Jose Teal Sur. Loc.

Nueces County

Coast Line Oil Co. No. 1 State (Redfish Bay), State Tr. No. 32. Logged 7,338-56 ft.; T.D. 8,660 ft.; 7-in. csg. 8,637 ft.; perf. csg. 8,555-76 ft.; flwd. S.W. under 250 lbs. press.; sqze. perf. to retest.

J. W. Cosner No. 1 LaPrelle, Robert White Subd. of Hoffman Petronellirnch. 10-in. csg. 1,010 ft.; T.D. 6,018 ft.; abd.

Refugio County

I. J. Allen No. 2 Rooke, Jose Miguel Addrite and Jose Maria Aldrite 6¾ Lge. Spd.

San Patricio County

Atlantic Ref. Co. No. 1 Jones, sec. 72, G. H. Paul Subd. of Coleman-Fulton Pasture Lds. T.D. 6,010 ft.; rerng. tbg. to test sd. 5,297-5,324 ft.

A. L. Bob No. 2 Green, T. T. Williamson Sur. S.D. 7,100 ft.

Humble O. & R. Co. No. 1 T. J. Carmody. sec. 22, Third Addn. of Taft farm lds. Drlg. sh. 4,527 ft.

Starr County

O. C. Borah No. 1 P. G. Garcia, Juan Salinas Sur. S.D. 563 ft.

O. C. Borah No. 1 Martinez, Joaquin Salinas Sur. S.D. 370 ft.

O. C. Borah No. 2 Martinez, J. Salinas Sur. T.D. 505 ft.; bailing.

Lee Davis et al No. 1 Garza, Jose Salvador De La Garza, Porc. 88. T.D. 2-664 ft.; 5½-in. csg. 2,657 ft.; I.P. 20 B.P.H.; ¼-in. ck.

G. E. Dodd No. 1-A Wood. V. Vela Sur. No. 84. S.D. 1,540 ft.; abd.

Republic Nat. Gas Co. No. 1 De Mendoza, Sur. 302. Cg. sdy. sh. 1,225 ft. no report.

Sun Oil Co. No. 1 Smith, A. J. Smith Sur. Loc.

Sun Oil Co. No. 1 Young, J. Sisneros Sur. No. 79. T.D. 3,008 ft.; 5½-in. csg. 2,765 ft.; perf. 1,840-44 ft.; tstd. S.W.

Wheelock & Collins No. 1-A Guerra, Santa Cruz Gr. Drlg. sh. 6,110 ft.

W. W. Zimmerman et al No. 1 Starr Co. Cattle Co., Juan De La Garza, Porc. 89. R.U.

Travis County

John R. Sterrett No. 1 Washington, Jose Antonio Navarro Sur. Cg. 1,294 ft.; no report.

R. P. C. Oil Co. No. 1 Jones, Reuben Hornsby Sur. No. 17. S.D. 825 ft.

Texas Empire Trading Co. No. 1 E. E. Jourdan, Santigo De Valle Gr. 5½-in. csg. 611 ft.; S.D. 711 ft.

Victoria County

Superior Oil Co. No. 1 A. R. Robertson. C Lot 10, Blk. R, Allison Richey Subd. R.U.

Webb County

R. S. Boling No. 1 Frost Natl. Bnk., E. L.&R.R. Sur. 596. Drlg. sh. 600 ft.

C. C. Bonner No. 1 Lewis, W. P. Rutledge Sur. 460. Cg. sh. 2,034 ft.; no report.

Garrison & Paris No. 1 Benavides, Hale Subd. of M. Arispe Gr., C Blk. 107. R.U.

O. W. Killam No. 1 Cuellar, Josefa Cuella Sur. T.D. 2,421 ft.; prep. to tst.

E. J. Sawyer No. 1 Garcia-Villareal, J. M. Garcia Sur. Cd. oil sd. 2,465-87 ft.; S.D. 2,511 ft.

Willacy County

Continental Oil Co. No. 2 Garcia Ld. Co., Blk. 118. T.D. 10,007 ft.; abd.

Williamson County

Fritz Fuchs No. 2 Bachmeyer, Hamilton White Sur. No. 3. R.U.

Marion Aldridge No. 1 Kroschewsky. 7-in. csg. 969 ft.; T.D. 1,084 ft. (corrected); acdzd.; S.D.

Wilson County

Lincoln Pet. Co. No. 1 Blake hrs. of Simon and Juan Dearocha Sur. Drlg. sd. 527 ft.
Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. S.D. 933 ft.

EAST TEXAS

(Border counties)

Rodessa—Cass County

Red Iron Drlg. Co. No. 1 Echols, Myers Sur. Drlg. sh. 3,400 ft.

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. T.D. 4,574 ft.; prep. deepen.

Marion County—Rodessa

Ark-La. Gas Co. No. 1 Belcher, Coy Sur. Drlg. sh.&L. 4,186 ft.
Ark.-La. Gas Co. No. 3 Holland, Hanks Sur. Set 7-in. csg. 6,078 ft.; tstg.: T.D. 6,118 ft.; comp.; 394 B.P.D.; ½-in. ck.; T.P. 100 lbs.
Ark.-La. Gas Co. No. 1 Johnson, Alex. Johnson Sur. R.U.
T. Bell et al No. 1 Moseley, D. Lane Sur. T.D. 2,524 ft.; reconditioning hole.
Gulf Oil Corp. No. 1 Smith, Hanks Sur. Set 5-in. csg. 6,068 ft.; T.D. 6,068 ft. perf. 6,058-66 ft.; D.S.T. 6,040-66 ft.; rec. 300 ft. oil and 186 ft. S.W.; 42 min.; sqzd. off; perf. 6,035-51 ft. and 6,036-40 ft.; comp.; 235 B.P.D.; ¼-in. ck.; T.P. 175 lbs.; C.P. 950 lbs.; acdzd.
Harvey, Henderson & Clardy No. 5-B Henderson, Ewing Sur. Drlg. L.&sh. 4,347 ft.
Holcomb & Thomason No. 1 Bohn, Coy Sur. Set 10¾-in. csg. 1,021 ft.
Holcomb & Thomason No. 1 Bramlett, 245 ft. S line, 20-ac. lse., 400 ft. F line, Gentry Sur. Set 5¾-in. csg. 6,064 ft.; T.D. 6,085 ft.
Hollandsworth Drlg. Co. No. 1 Hurst, Hanks Sur. Drlg. L.&sh. 5,882 ft.
Sam Killingsworth No. 1 McRevnolds, 5-ac. lse., Coy Sur. Drlg. sh. 4,969 ft.
Ohio Oil Co. No. 3 Moseley, Francis Sur. Drlg. sh.&L. 4,750 ft.
Phillips Pet. Co. No. 2 Denton, Coy Sur. Drlg. L.&sh. 3,390 ft.
Phillips Pet. Co. No. 1 Jackson, Hanks Sur. Drlg. L.&sh. 3,541 ft.
Shell Pet. Corp. No. 1-C Henderson, Bennington Sur. Drlg. L.&sh. 5,633 ft.
Shell Pet. Corp. No. 3 Schulter, S. Smith Sur. Set 5-in. csg. 6,034 ft.; comp.; 503 B.P.D.; ¼-in. ck.; T.P. 600 lbs.; C.P. 1,025 lbs.; perf. csg. 6,015-33 ft.; T.D. 6,037 ft.
Shell Pet. Corp. No. 4 Schluter, Smith Sur. R.U.
Union Prod. Co. No. 9 Hutchinson, Coy Sur. R.U.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Set 9⅝-in. csg.; drlg. 8,192 ft.

Sabine County

Pet. Heat & Power Co. No. 1 Jasper State Bnk., McDonald Sur. Drlg. 2,527 ft.

Shelby County

Center Oil Co. No. 1 Windham, A. H. English Sur. T.D. 3,422 ft.; set 6⅝-in. csg. installing pmp.
Mallard & Locke No. 1 W. E. Roller Est., Sullins Sur. Drlg. 4,181 ft.
W. A. Reddit No. 2 Pickering Lbr. Co., P. J. Loggins Sur. Drlg. 2,206 ft.

WEST TEXAS WILDCATS

Andrews County

Atlantic Ref. Co. No. 1 Texas Univ., sec. 26, Blk. 11, University Lands. Tstg. 4,600 ft.
H. S. Forgerson No. 1 Lockhart-Brown. Tstg. 4,483 ft.
Perkins, Wright & McMillan No. 1 Cowden. W.O.C. 8,012 ft.
Rhodes & Tompkins No. 1 Emma Cowden, sec. 1, Blk. 44, T.&P. Sur. Drlg. 3,950 ft.
Seaboard Oil Corp. No. 1 Munger-Nix, sec. 1, Blk. A-4, P.S.L. Sur. S.D. 4.526 ft.; temp. abd. 4,526 ft.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. S.D.O. 4,306 ft.

Cochran County

Devonian-Honolulu-Cascade No. 1-C-8 Duggan, sec. 8, Oldham C.S.L. Sur. R.U.S.T.; 7-in. set at 4,958 ft.
Texas Co. No. 1 Mallett Ld. & Cattle Co., sec. 7, Blk. G, P.S.L. Sur. P.B. 5,058 ft.; S.D. for pump.

Coke County

H. E. Ogden No. 1 Rawlins, sec. 390, Blk. 1-A. S.D.O. 3,504 ft.
Barnett Pet. Co. No. 1 J. R. Mims, sec. 19, Blk. W, T.&P. Sur. S.D. 1,861 ft.

Crane County

T. B. Cranfill, Trustee, No. 1 J. B. Tubbs, Blk. 32, sec. 20, P.S.L. Sur. Loc.
Gulf Oil Corp. No. 4 McKnight, sec 3, Blk. B-21, P.S.L. Sur. Drlg. 3,928 ft.

Crockett County

H. W. Black & Eubank Oil No. 1 University, sec. 13, Blk. 14, University Sur. Comp. 63 B.O.P.D.
R. H. Henderson No. 1 University, Univ. Sur., Blk. 14, sec. 18. Drlg. 45 ft.
Short & Gillette No. 1 J. W. Owens, Jose Zunegas Sur. Drlg. 1,450 ft.

Culberson County

Harry J. W. Niehaus No. 1 C. M. Caldwell, sec. 15, Blk. 109, P.S.L. Sur. S.D.O. 2,500 ft.
Harry J. W. Niehaus No. 1 fee, Blk. 109, sec. 13, P.S.L. Sur. 1,800 foot test. Loc.
S. J. Isaacs No. 1 L. G. Sheddan, sec. 25, Blk. 52, P.S.L. Sur. Spd. and S.D.
Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. Drlg. 508 ft.

Dickens County

J. F. Marrisey No. 1 I. J. McMahan, sec. 319, Blk. 1, H.&G.N. Sur. S.D. 1,050 ft.

Ector County

Stogner et al No. 1 Hendrick, sec. 4, Blk. 43, T.&P. Sur. Drlg. 3,986 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D. 3,571 ft.

Fisher County

S. & D. Daube and Forest Dev. Co. No. 1 A. C. Bennett, sec. 51, Blk. 2, H.& T.C. Sur. Rng. 7-in. to test 3,699 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Rng. whipstock 5,014 ft.; last report.

Gaines County

Eastland Oil Co. No. 1 R. C. Dunbar, sec 24, Blk. A-12, P.S.L. Sur. W.O.C. 4,640 ft.
J. T. Perryman, Jr., No. 1 C. H. Doak, D.&W. Sur., Blk. H, sec. 43. Drlg. 2,150 ft.
Riddle & Warr No. 1 J. B. Brown et al, sec. 26, Blk. G, C.&M.R.R. Sur. Drlg. 40 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Cg. 5,756 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. S.D. 180 ft.

Hockley County

Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. P.B. 5,036 ft.; pump 28 B.O.P.D.; tstg. 5,036 ft.
Skelly Oil Co. No. 1 Elwood Est., Howard C.S.L. Sur., Lge. 15. W.O.C. 283 ft.

Howard County

Lockhart Pet. Corp. No. 2 Robert Scott, W.&N.W. Sur., Blk. 29, sec. 86. Drlg. 20 ft.
Magnolia Pet. Co. No. 5 O'Daniel, sec. 34, Blk. 30, T.&P. Sur. Comp. 264 B.O.P.D.
W. B. Fowell, Trustee, No. 1 Guitar Trust, Blk. A, sec. 17, Bauer & Cockrell Sur. Loc.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Rng. csg.; T.D. 4,501 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Tstg. for gas 4,159 ft.; T.D. 4,225 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. Prep. reset 5-in. 3,570 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. Prep. cement 7-in. parted 3,460 ft.

Martin County

W. D. Anderson No. 1 J. R. Vance, sec. 9, Blk. 36, T.&P. Sur. U.R. 8-in. 2,460 ft.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Drlg. 960 ft.
Hartzell-Nawn & O'Hara No. 1 Wilhelm, sec. 24, Blk. A-1735, Indianola R.R. Sur. S.D.O. 655 ft.

Pecos County

Cox & Moore No. 1 White & Baker, sec. 43, Blk. Z, T.C.R.R. Sur. S.D. 8-in. 430 ft.
Ed Falney No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. Rebldg. drk.; S.D. 2,055 ft.
J. N. Gregory et al No. 1 Humble-O'Niell, H.&G.N. Sur., Blk. 10, sec. 74. Loc.
J. D. Kugle, Jr., No. 1 W. C. Jackson, sec. 120, Blk. 8, H.&G.N. Sur. Comp. 20 B.O.P.D.
Magnolia Pet. Co. No. 1 McKee. Drlg. 6,190 ft.
E R. Minshall et al No. 1 Haynie, sec. 28, Blk. 146, T.&St.L. Sur. Fsg. 2,025 ft.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. by tools 7,190 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. S.D.O. 5,427 ft.

Reeves County

Grisham Hunter Corp. & N. A. Grisham No. 1 Geo. Daniel, sec. 40, Blk. 58, T.&P. Sur. D.&A. 4,653 ft.
Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. U.R. 2,380 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, sec. 130, Blk. 97, H.&T.C. Sur. W.O.C. 1,623 ft.
Gursham-Hunter No. 1 C. M. Wellborn, sec. 142, Blk. 25, H.&T.C. Sur. Loc.
Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. S.D.O. 3,515 ft.

Sterling County

Loffland & Moore Bros. No. 1-A J. S. Cole, W.&N.W. Sur., Blk. 30, sec. 1. W.O.C. 140 ft.
J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. Rng. 7-in. 1,840 ft.
W.F.W. Oil Co. et al No. 1 R. W. Foster, sec. 9, Blk. 13, S.P.R.R. Sur. Drlg. 760 ft.

Stonewall County

Bert Fields No. 1 J. M. Lee, J. E. Pierson Sur. Drlg. 2,014 ft.
General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 4,511 ft.
Percy Jones et al No. 1 fee, Austin & Williams Sur. 348, sec. 2. R.U.R.
Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. Fsg. 7-in. parted 72 ft. from top.

Terrell County

Schermerhorn Oil No. 1 H. P. Allison, sec. 22, Blk. B-2, C.C.S.D. & R.G.N.G. Sur. 2,500-ft. test. Loc.

Terry County

L. E. Hults No. 1 P. J. Ross, sec. 6, Blk. D-14, C.&M.R.R. Sur. Drlg. 5,107 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch. Sur. Fsg. 4,495 ft.
J. B. Watson No. 1 Llano, C.S.L. Sur., sec. 16, 500-ft. test. Loc.

Upton County

W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. S.D. 730 ft.

Ward County

M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. Tstg. 2,092 ft. (last report).
J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. S.D.O. 5,085 ft.
Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. S.D. 2,000 ft.
John Poindexter No. 1 V. Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Drk.
S. J. Rixford No. 1 W. B. Crump, sec. 2, Blk. 34, H.&T.C. Sur. Drlg. 1,135 ft.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. S.D. 2,108 ft.; S.I. storage full 2,078 ft.; C.O. 2,105 ft.

Winkler County

Ed. L. Gelder No. 1 R. D. Kessler & F. Kessler, sec. 14, Blk. B-3, P.S.L. Sur. Comp. 109 B.O.P.D.
Magnolia Pet. Co. No. 13 State-Walton, sec. 14, Blk. B-3, P.S.L. Sur. S.D.O. 3,205 ft.

Yoakum County

Helmerich & Payne No. 1 S. O'Dowd, sec. 896, Blk. D, J. H. Gibson Sur. Tstg. 5,035 ft.

E. C. TEXAS WILDCATS

Anderson County

J. G. Mayo et al No. 1 Royall & Davey, L. McClowd Sur., 12 mi. E of Palestine. Drk.

Angelina County

Ginter Bros. No. 4 Copes Heirs, J. Morin Sur., 3 mi. S of Dibol. R.U.M.
K. L. McHenery No. 1 L. Henderson, Wm. White Sur., 1 mi. E of Hamlet. Drk.

Camp County

W. C. McGlothlin No. 1 Joe Venters, S. Wright Sur., 3 mi. SE of Leesburgh. S.D.W.O. 5,710 ft.

Cherokee County

J. G. Mayo No. 1 Travis, T. Quevada Sur., 2 mi. SE of Mt. Selmon. S.D. 3,400 ft.

Dallas County

Plaza Oil Co. No. 1 Davidson Marchants Sur., 1 mi. NW of Seagoville. S.D. 3,528 ft.

Falls County

M. H. Hayes No. 1 A. Garrett, J. M. Sanches Sur., 2 mi. NE of Lott field. S.D. 1,072 ft.

Grayson County

Epenhauser No. 1 J. M. Rogers, L. Kelly Sur., 1½ mi. NE of Whitesboro. Drk.

Gregg County

Humble O. & R. Co. & Gulf Oil Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi. SW of Longview Trinity test. Elev. 272 ft.; tstg. 2,000,000 ft. gas; installing separator at 8,131 ft., P.B. depth.

Henderson County

Hi-Point Oil Co. No. 1 Dan Smith, 2½ mi. SE of Flag Lake, F. Brown Sur. Drk.
Jones-Mallory No. 1 A. Mallory, T. S. Mitchell Sur., 6 mi. SW of Mabank. Abd. 107 ft.
Richards & Holloway No. 1 J. P. and T. Tarkington, W. Kenewell Sur., SE of Flag Lake. Tstg. 3,042 ft.

Houston County

Humble O. & R. Co. No. 1 Daily & Taylor, J. G. Thompson Sur. Cg. ahead.
Humble Oil & Ref. Co. No. 1 C. C. Hill, J. L. LaReviere Sur., Navarro Crossing field. Loc.
Sun Oil Co. No. 1 R. S. and H. H. Daily, J. G. Thompson Sur., 3 mi. SE of Navarro Crossing. Tstg. 3,882 ft.

Lamar County

Dahl & Barr No. 1 Lewis & McQuiston, R. Russell Sur., 1 mi. NE of Paris. S.D. 1,115 ft.

Leon County

Lone Star Gasoline No. 2 G. W. Lee, R. Hunter Sur., 5 mi. SE of Buffalo gas area. M.I.M.

Limestone County

J. S. Cosden, Jr. No. 1 J. J. Bower, J. Breeding Sur., near Prairie Hill. Abd. at 1,010 ft.

McLennan County

Lisle Steele No. 1 C. H. Cherry, M. Martinez Sur., 4½ mi. SE of Waco. Rng. csg. 798 ft.
Russell & Thompson No. 1 L. L. Phillips, C. O. Campo Sur., 4 mi. S of Waco. S.D.W.O. 1,070 ft.

Madison County

C. K. Handy No. 1 D. G. Cannon, D. Arriola Sur., 6 mi. NW of Madisonville. S.D. 649 ft.

Navarro County

R. G. Dickson No. 1 A. M. Swink, W. Hudson Sur., 3 mi. S of Richland. Loc.
J. O. Griffiths No. 1 Haynes, Able Parsons Sur., 4 mi. NE of Kerens. P.B. to 1,200 ft. from 2,338 ft.; crooked hole.
Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana. S.D. 2,765 ft.
Topez Oil No. 1 M. Mizell, T. J. Chambers Sur., 14 mi. NE of Corsicana. Loc.

Red River County

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. S.D. 21 ft.
Texas Trading Co. No. 2 So. Pine Lbr. Co., D. D. Bruton Sur., 12 mi. N of Clarksville. S.D.W.O. 2,154 ft.
Walters et al No. 1 Pharmplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. S.D. 172 ft.
C. E. Whitehead No. 1 R. H. Ringwald, A. Moore Sur., 1 mi. NW of Manchester. S.D. 50 ft.

Rusk County

J. W. Merrick et al No. 1 Peter Tipps, T. Uzzell Sur., 6 mi. S of East Texas field and 5 mi. N of New Salem. Deepening from 3,888 ft.; S.D.W.O. 3,983 ft.

Smith County

H. L. Hunt et al No. 1 S. H. Bradly, T. P. Payne Sur., 10 mi. E of Tyler at Chappel Hill. Tstg. 7,528 ft.

Trinity County

Gassage et al No. 1 Mrs. C. H. Elliot, Joel Clapp Sur., 6½ mi. N of Trinity. Drk.

Upshur County

E. J. Dupree No. 1 W. A. Lawrence, R. Polly Sur., 4 mi. S of Gilmer. S.D.W.O. 4,308 ft.
Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. D.&A. 9,538 ft.

NORTH TEXAS WILDCATS

Archer County

Adams O. & G. Co. No. 1 C. Moer, sec. 21, C.&P. Sur., Blk. 3. S.S.O. 4,135-65 ft.; tstg.
Burns & Omohundro No. 1 Dr. A. B. Edwards, Blk. 44, L. P. Hunt Subd., 5,300-ft. test. 10-in. 123 ft.; drlg. 4,420 ft.
Fain-McGaha Oil Corp. No. 1 R. W. Fuller, Blk. 1, H.&T.C. Sur., 6,000-ft. test. T.D. 5,159 ft.; P.B. 5,129 ft.; W.O.C.; P.B. 5,087 ft.; shot; csg. 3,998-4,014 ft.; test 1,300 ft. S.W.; S.D.O.
Fain-McGaha No. 1 McCrory G, sec. 44, A.T.N.C.L. Drk.
Gray & Thweatt No. 1 Ferguson, sec 2,

New MAC
PLUNGER BARREL
for 2-inch tubing

Outlasts three ordinary barrels, as Steel Plunger works in and out of Cast Iron Barrel as much as 2 feet on the up and down stroke and more if desired, thus flushing itself free of sand or gypsum.

Reversible Valve Body and Plunger make for lowest upkeep.

Furnished with 2-Cup Standing Valve and with, or without, Garbutt Rod.

Save, with the New "MAC"!

Ask for complete details and price list.

McGREGOR
WORKING BARREL COMPANY
Bradford, Pa., U.S.A.

S.P.R.R. Co. Sur. No. A-968. 6⅝-in. 4,050 ft.; W.O.C.

Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Testing at 5,105-16 ft.

Hines & Hancock No. 1 W. R. Hammond, H. Corzine Sur. A-56. S.S.O. 3,647-48 ft.; T.D. 3,753 ft.; S.D.O.

Frank King No. 1 Anita Koenig et al, S.F. Moseley Sur. No. A-297. Loc.

Louis Sikes et al No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; Tstd. S.W.; S.D.O.

Thos. A. Jirik No. 1 Kunkel, sec. 2, P.R.R. Sur. A-1186. 10-in. 200 ft.; W.O.S.R.

Lacreta Pet. Co. No. 1 L. H. Farmer, W. C. Winters Sur. A-663, 4,000-ft. test. Drk.

Phillips Pet. Co. No. 1 J. C. Arthur, sec. 3, G.H.&H. Sur. No. A-158. Drlg. 4,775 ft.

Reno Oil Co. No. 10 H. Wilmut A, sec. 4, S.P.R.R. Sur. A-1044. S.S.O. 3,760-66 ft.; 6⅝-in. 3,750 ft.; drlg. plug; testing; 500 ft. O.I.H.

Westmount Oil Co. No. 7 T. J. Dempsey-Denton Co. Sch. Ld., sec. 10. S.S.O. and S.L. 4,145-64 ft.; S.D.O.

Baylor County

Chatham & Harwell No. 1 Parker et al, sec. 3122, T.E.&L. Sur. Drk.

J. F. Morrisey Co. No. 1 Jno. White Est., sec. 2483, T.E.&L. Sur. 10-in. 100 ft.; W.O.R.

Riddels, Pipes & Holcomb No. 1 W. H. Nichols, Jr., sec. 117, B.B.B.&C. Sur. A-85. Loc.

Wilcox O. & G. Co. No. 1 W. H. Portwood, sec. 3144, T.E.&L. Sur. Drlg. 3,472 ft.

Clay County

Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12, 6,000-ft. test. Drlg. 5,415 ft.

Joe Rogers No. 1 C. P. Davis, Blk. 6, Montague Co. School Land Sur. A-307, 4,500-ft. test. Spud. and S.D.

Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. S.D.O. 2,330 ft.

Cooke County

Sinclair Prairie Oil Co. No. 1 J. M. Best T. Toby Sur. A-1054. 9⅝-inch 4,875 ft.; O.S. 4,887-4,900 ft.; est. 500 bbls.; tstg.

Denton County

L. & E. Oil Co. No. 1 J. Hancock Life Ins. Co., J. Thomas Sur. Drlg. 4,002 ft.

Foard County

Wynne & Ed S. Smith No. 1 Worsham, J. M. Clay Sur. R.U.R.

Hardeman County

Hillsboro Oil Co. No. 1 Thomas, sec. 314, W.&N.W. Sur. Loc.

Jack County

Noah Daves No. 1 K. D. Baker, sec. 2709 T.E.&L. Sur. 4,000-ft. test; S.D.O. 1,930 ft.

Harper Pet. Co. 1 Mary E. Norman, A. Pearson Sur. A-1304. O.S. 1,937-38 ft.; testing.

Knox County

Roeser Pendleton and I.T.I.O. No. 1 G. H. Beavers, sec. 151, H.&T.C. Sur. Loc.

Montague County

Humble O. & R. Co. No. 1 E. G. Adams et al, I. H. Meeks Sur. A-506. Drlg. 2,200 ft.

H. H. Powell No. 1 Arch Durham, W. J Wagoner Sur. A-936. S.D. 822 ft.

J. W. Sorrell et al No. 1 J. E. Walthall, Sam H. Smith Sur. A-662. S.D. 3,777 ft.

Wichita County

Aggers & Norwood No. 1 Ware, sec. 14, Cherokee Co. Sch. Ld. Loc.

C. W. Boller No. 1 S. Y. Collins, Charles Roberts Sur. A-540. 6⅝-in. 3,855 ft.; brkn. sdy. L. and O.S. 3,860-3,900 ft.; testing.

Hanlon Buchanan, Inc., No. 1 Fassett & Tuttle-D, sec. 23, Cherokee Co. Sch. Ld. Drlg. 3,590 ft.

Madden & Goldsmith No. 1 Jackson, Blk. 20, Denton Co. Sch. Lds. S.D.O. 4,505 ft.

Shell Pet. Co. No. 1 Reilly, F. Jordan Sur., Abst. 167. 6⅝-in. 3,815 ft.; P.B. 3,880 ft., tstg. 100 bbls. per day.

Wilbarger County

Lloyd Brown No. 1 W. T. Waggoner, sec. 27, H.&T.C. Sur., Blk. 6. Loc.

Young County

Cosden Oil Co. No. 1 Price, Y.C.S.L. Sur. No. A-1285. Drlg. 3,000 ft.

Cosden Pet. Corp. No. 1 D. R. Sewell B, J. Bray Sur. A-1949. 6⅝-in. 3,774 ft.; W.O.C.

N. B. Crenshaw No. 1 J. C. Dwight, sec. 1442, T.E.&L. Sur. Drlg. 3,801 ft.

Horwitz & Oldom No. 1 C. J. Taach B, sec. 248, T.E.&L. Sur. Drlg. 1,010 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Cooper, Weeks & Hughes No. 1 C. D. Straley, 660 ft. from W L, 1,880 ft. from N L, sec. 370, Geo. W. Denton Sur. Ordovician test; set 7-in. and cmt. 4,200 ft.; S.D. at 4,325 ft.

Joe Gallagher No. 1 W. T. Harris, 200 ft. from S line, 1,050 ft. from E line sec. 347, G. W. Denton Sur. 2,000-ft. test, 5 mi. N Oplin. S.S.O. 855 ft.; drlg. 1,325 ft.

J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains, rotary to 4,000 ft. Surf. to 100 ft.; top Caddo 2,669 ft.; cored sat. lime 2,674-98 ft., T.D.; cmt. csg. 2,670 ft.

Hal Hughes No. 1 Tom Windham, 660 ft. from N and W lines SW¼ sec. 369, Geo. Hancock Sur. Drlg. 300 ft.

J. C. Jackson et al No. 1 Thompson, 2 mi. S. Eula, sec. 30, B.B.B.&C. Sur. Drlg. 2,390 ft.

Petroleum Drlg. Co. No. 1 Cook & Jordan, 760 ft. from E L, 1,838 ft. from N L, sec. 350, Geo. Hancock Sur. Ordovician. Drlg. 4,200 ft.

Wittmer Oil & Gas Properties, Inc, No. 1 R. D. Williams et al, 300 ft. from N line, 467 ft. from W line sec. 2,269, T.E.&L. Sur., 2 mi. NE Putnam, 4,500-ft. test. S.O. in Ellenburger 4,077 ft.; drl. sulf. wtr. 4,115 ft., T.D.; P.B.; shot 290 qts. 3,239-3,435 ft.; est. 50 B.W. and 10 B.O. P.D.; acidized 5,000 gal.; testing.

Coleman County

Anzac Oil Corp. No. 1 Burk, A. Williams Sur. T.D. 750 ft.; 2,000,000 ft. gas.

R. M. Coleman No. 1 Ford, A. S. Lipscomb Sur. Drlg. 1,162 ft.

F. L. and E. R. Cooper No. 1 W. R. Stockard, 330 ft. from NL, 330 ft. from WL, N½ SE¼ sec. 23, T.&N.O. Sur. Rotary to 3,650 ft.; M.I.M.

S. M. Devine et al No. 1 Masterson, 2 mi. W of Burkett, Asa Wickson Sur. Drlg. 2,122 ft.

Garrett Oil Co. No. 1 W. S. Smith et al, 4 mi. SE Coleman, J. Thiele Sur. 2,300-ft. test; fishing 2,068 ft.

Bob Murray No. 1 Dibrell, H. Kigan Sur., near Camp Colorado. Drlg. 2,391 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drlg. 1,000 ft.

Dorothy Oil Co. No. 1 Mrs. J. L. Johnson, 1,000 ft. from S line, 1,080 from W line, E½ SW¼ sec. 29-4, H.&T.C. Sur. Rigging.

Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. S.O. 2,525-53 ft. and 2,574-95 ft.; cmt. 7-in. 3,004 ft.; shot 180 qts.; drlg. bridge to acidize.

Neil A. Moore No. 7 Holcomb Heirs, 970 ft. from W line and 600 ft. from N line, SW¼ 1-4, H.&T.C. Sur. Loc.

Fisher County

Forest Dev. Corp. & Daube No. 1 L. G. Bennett, 660 ft. from N and E lines, sec. 51-3, H.&T.C. Sur. Rotary to 4,500 ft.; 3 mi. SW of Rotan. Set 10-in. at 300 ft.; cored 3,667-99 ft.; satur. 3,685-95 ft.; cmt. 7-in. csg. 3,685 ft.; W.O.C.

Owens-Snebold & A. C. Varner No. 1 J. H. Millsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL, sec. 61-2, H.&T.C. Sur. Drlg. 1,440 ft.

Haskell County

Algord Oil Co. No. 1 J. F. Jones, 330 ft. from S and W lines, E. T. Roche Sur. No. 4, Abst. 525. Loc.

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. Set 150 ft. of 12½-in.; S.S.G. 1,620-30 ft.; T.D. 2,686 ft.; P.B. to 2,684 ft.; swbd. 30 B.O. and 48 B.W.P.D.; deepening.

Jones County

Dunigan Bros. and Fred Hyer No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. Tested ½ bbl. oil per hr. 2,442-47 ft. Drlg. 2,550 ft.

R. B. Farris No. 1 Chas. Donohoo, 220 ft. from S and E lines, N½ sec. 5, B.B.B. &C. Sur. Drlg. 1,200 ft.

Grisham-Hunter Corp. No. 2 E. D. Appling, 1,140 ft. fr. E L, 1,208 ft. S L, NW¼ sec. 32, B.B.B.&C. Sur. Loc.

S. C. Herring No. 1 B. L. Ellis, 330 ft. fr. N and E lines, SE¼ sec. 8-15, T.&P. Sur. Loc.

Humble No. 1 Riley Horton, 330 ft. from N line, 330 ft. from E line, sec. 40-18, T.&P. Sur. S.S.O. 2,558-60 ft.; wtr. 2,564 ft.; drlg. A.

Humble No. 1 Dallas Joint Stock Land Bank, 990 ft. from W line, 4,458 ft. from S line of M. Fragosa Sur. 267. Drlg. 1,620 ft.

Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub 18, Austin Williams Sur. 339. Set 10-in. 2,245 ft.; wtr. 2,900-05 ft.; H.F.W. 3,150 ft.; drlg. 3,700 ft.

Chas. J. Kleiner No. 1 Mrs. A. E. Carlson, 333 ft from S and E lines, NW¼ sec. 19-3, H.&T.C. Sur. Drlg. 2,900 ft.

F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1. M.E.&P. Sur. H.F.W. 3,240 ft.; drlg. 3,360 ft.

N. H. Martin & Son No. 1 J. W. Wyatt, 150 fr. S L 316 fr. E L, W 102 ac. in sec. 4-14, T.&P. Sur. Loc.

Oil States Exploration No. 1 J. E. Sellers, 100 ft. from S line, 330 ft. from W line, S. Andrews Sur. 191. H.F.W. 1,785 ft.; S.S.O. 2,085-90 ft.; drlg. 2,130 ft.

L. H. Pearson No. 1 B. L. Hood, 1,100 ft. from S and W lines, W. T. Evans Sur. No. 1. Drlg. 1,360 ft.

S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. S L, 2,428 fr. E L, J. E. Cockrell Subdiv. 2, G. Martinez Sur. 195. Loc.

Shaheen Oil Co. No. 1 T. B. McCoy, 595 ft. from N line, 660 ft. from E line, sec. 1-16, T.&P. Sur. Drlg. 1,400 ft.

W. L. Snoddy & C. C. Dodson No. 1 C. L. Steffens et al, 220 ft. from S and W lines SW¼ NE¼ sec. 32-15, T.&P. Sur. U.R. 8-in. to 1,810 ft.; S.D.O.

Ungren & Frazier No. 1 W. E. Fellows, 990 ft. from N line, 330 ft. from E line, S½ sec. 25-15, T.&P. Sur. Set 6-in. 2,082 ft.

Nolan County

Oyster, Harkrider et al No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft.; drlg. 1,200 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test; H.F.W. 2,185-95 ft.; drlg. 2,600 ft.

Forest Dev. & Helmerich & Payne No. 1 T. G. Hendrick, C sec. 1, A.B.&M. Sur. Show gas and oil cored 4,838-45 ft.; T.D. 5,056 ft.; set 7-in. to 4,818 ft. to test showing 4,819-37 ft. in Marble Falls.

R. H. Gordon & Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, sec. 38, L.A.L. Sur., 4,500-ft. test. Loc.

J. G. Hammond No. 1 Coker, 1,620 ft. from S line and 1,020 ft. from W line, sec. 159, B.B.B.&C. Sur. Drlg. 2,610 ft.

D. W. Power No. 1 Black Ranch, C SE 80 ac. of NE½ sec. 391, T.E.&L. Sur., Ellenburger test.

Stephens County

Lone Star No. 1 E. H. Brooks, 400 ft. from S and W lines, NE 200 ac. of sec. 54-7, T.&P. Sur. Rigging.

Lone Star No. 1 J. S. McKee, 660 ft. from N line, 660 ft. from W line, sec. 41-7, T.&P. Sur. Drlg. 2,200 ft.

G. Willard Rich No. 1 J. W. Andrews, 330 ft. W line, 450 ft. S line, NW¼ sec. 39-7, T.&P. Sur. Set 12¾-in. at 1,620 ft.; top Lake sd. 3,667 ft.; filled 1,400 ft. overnight; rng. 7-in. to test.

Stonewall County

Bert Fields No. 1 R. P. Pierson, C of E 80-ac., E. A. & S. M. Lee Sur., Abst. 817. Drlg. 1,860 ft.

General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371, H.&T.C. Sur., Blk. 2. Set 13⅜-in. 2,119 ft.; set 10-in. 3,508 ft.; Cmt. 150 sacks; S.S.O. at 3,970 ft.; drlg. 4,508 ft.

F. B. Parriott No. 1 H. T. Carille, 330 ft. from S line, 990 ft. from E line, SW¼ NE¼ sec. 293, Blk. D, H.&T.C. Sur., rotary to 5,500 ft., 6 mi. NW of Swenson. Set 8⅝-in. at 3,345 ft.; set 6-in. to 3,896 ft.; drlg. 4,615 ft.

Percy Jones No. 1 fee, 330 ft. W line, 220 ft. from N line, sec. 2, Austin & Williams Sur. 348. Spudded.

Taylor County

Lewis Production No. 1 L. Henslee, 330 ft. from E L of 234-ac. tract in J. A. Nabors Sur. No. 10 and sec. 27-17 T.&P. Sur., 4 mi. E of Merkel. S.S.O. 2,035-40 ft.; drlg. 2,347 ft.

Throckmorton County

Crawford & Brown No. 1 J. A. Matthews, Narcissa Thompson Sur. Est 10,000,000 ft. gas daily at 774 ft.

Jones & Stasney No. 1 C. T. Brockman 330 ft. S line, 330 E line sec. 95, Comanche Indian Sur. Est. 5 to 10 million ft. gas 1,434-48 ft.; drlg. 3,230 ft.

Marland-Drake No. 1 Dickie Bros., center T.E.&L. Sur. 2226. Set 5-in. 3,925 ft.; S.S.O. 3,938-43 ft.; 5,000 gals. acid.; S. D.O.

Morris & Spoonts No. 1 Alden Bros., NW cor. county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 1,178 ft.

White & Duncan No. 1 Raynolds Cattle Co., 330 ft. from S and W lines, NE¼ sec. 83, Comanche Indian Reservation. Set 10-in. at 1,405 ft.; drlg. 2,300 ft.

Henry Zweifel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. S.S. oil 3,902-06 and 3,914-20 ft.; T.D. 3,924 ft.; set 6-in. and cmt. 3,894 ft.; acid 5,000 gals.; swbg. oil and wtr.

SOIL ANALYSIS

(Continued from Page 39)

average (or mathematical) curve does not reflect the same general peaks and recessions as the mineral curve, the entire survey is placed under question, and thrown out if no justification can be found for the irregularity.

Interpretations

Skilled interpreters are required to obtain from the records the significant facts which indicate the presence of structure or petroleum. The interpreter's work is not infallible, as it is possible for outside influences to enter and give misleading evidence which might otherwise have been reliable. For that reason, and others, correlative and interpretative work is made in the light of all available surface and subsurface geological knowledge. Such independent data often explains what appears to be unjustified abnormalities. Further, they may also go a long way in confirming actual geochemical findings. In entirely unexplored regions, the interpreter must rely solely upon the reflections in his quantitative mineral curve.

The basic principles followed in making interpretations from soil analysis studies are as follows:

1. Peaks or extremes which are evident on the quantitative mineral curve may point to the presence of faulting; or folding such as might occur along the edges of an anticline or monocline; or dips such as occur off of salt domes. The theory back of this deduction is that there is greater opportunity for upward migration at these disturbed places in the earth.

2. Prominent recessions of the mineral curve across an area may point to the presence of an anticline or other feature, the theory being that the dense caprock overlying deposits of petroleum will lessen the sensitivity of hydrocarbon showings at the surface.

3. Where prominent peaks are recorded on the graphs at the edges of these recessions, indication is given of some sort of structure, the high relative hydrocarbon values at the peaks indicating folded or faulted edges, and the receding values indicating a tightening of the overlying caprock.

Figure 3 shows a map of the Pierce Junction salt dome in Harris County, Texas, on the Gulf Coast. The dark dots represent present oil wells, and the lines of small circles indicate location of sampling lines made in a reconnaissance soil survey of this area.

Figure 4 shows the graphic records made from laboratory analyses of soil samples taken at these various stations. The single line indicates the quantitative mineral curve, and the heavy line marks the mathematical or mean average curve, both plotted against the station points along the abscissa.

Figure 5 shows the regional area surrounding the Wheelock oil field in Cooke County, Texas, upon which a one-line reconnaissance survey was run.

The mineral (single line) curve and mathematical (heavy line) curve as obtained from laboratory analyses of the soil samples, is shown in Figure 6. The extreme peaks recorded from stations 116 to 119 confirm the position these stations occupy on the map, and the position of the oil field itself. This was another test survey made recently for the purpose of checking the soil analysis surveys against known subsurface conditions. However, had this sort of a graph been obtained in a wildcat survey, the extreme showings would have been interpreted as indicative of a faulted subsurface condition, possibly serving as a trap for oil, and would have warranted the running of additional line-tests in order to map the area in greater detail.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending June 18 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
72½	55	800	61⅛	59	61⅛	Amerada Corp.	788,675	N.P.	50cQ	4-30-38	$2.00	114⅞	51½	125½	75
24	17¾	4,300	20½	20	20¼	Atlantic Refining	2,663,999	$25	25cQ	6-15-38	1.00	37	18	35⅛	26⅝
19	12⅛	1,800	16	15⅝	15⅞	Barber Co.	390,223	$10	75c	12-16-37	1.00	43⅜	10⅛	38½	21
16⅜	10⅛	9,900	13¾	12¾	13	Barnsdall Oil Co.	2,250,344	$5	25cQ	5-2-38	1.00	35¼	10	28¼	14⅛
10½	7	15,300	8½	8⅛	8½	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	5-14-38	.90	17⅞	7	17¼	11½
34⅜	21¼	5,900	28	26	27½	Continental Oil of Delaware	4,682,583	$5	25cQ	6-30-38	1.50	49	24	44⅞	28⅛
8⅞	5	1,500	6½	6⅛	6⅛	Houston Oil (new)	1,098,618	$25		10-17-30	....	17⅝	4¾	13⅞	6⅝
22⅝	12¼	2,100	15¼	14½	14⅞	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-38	1.50	35⅝	14	30⅞	17¼
17¾	10⅝	No sales	..	..	..	Mission Corporation	1,382,945	$10	$1	6-29-38	1.25	34	15	29⅞	16¾
23	14⅛	3,800	15¾	14¾	15⅝	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅞
14⅞	9	10,900	9¾	9½	9¾	Ohio Oil Co.	6,563,377	N.P.	50c	12-15-37	1.00	22⅞	8	18	12⅛
15⅞	10¼	100	10½	10½	10½	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11¾	23½	11¾
9¼	7	No sales	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1 •	12-21-37	1.00	17⅛	7	20⅝	12¼
42½	27¼	5,600	33	31¾	32¾	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-38	2.75	64	30½	52¾	33⅛
20	15	1,000	18⅝	18¼	18⅝	Plymouth Oil Co.	1,029,800	$5	35cQ	3-31-38	1.65	29⅞	13	27¾	11⅞
13½	8¼	5,200	9½	9	9⅛	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	.25	24⅜	8¾	27⅞	16
7⅞	5	2,900	5¼	5⅛	5¼	Richfield Oil Corp.	3,896,638	N.P.	25c	12-24-37	.25	6½	4⅛	..	..
27½	15½	400	20	19¾	20	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-38	1.00	54⅛	16	44	30½
18¼	10	900	12⅜	11¾	12⅜	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	1.00	34¾	14⅞	28¼	14¾
34¾	18½	1,200	23¼	22	22	Skelly Oil	1,003,949	$15	50c	6-25-38	1.50	60⅝	26½	47⅜	19½
16⅜	10¾	21,500	13⅛	12½	13	Socony-Vacuum	31,151,071	$15	25c	3-15-38	.80	23¼	13	17½	12½
33⅞	25⅛	11,800	26⅝	25⅞	26⅜	Standard Oil of California	13,014,754	N.P.	35cQ†	6-15-38	2.00	50	27⅛	47⅝	35
35½	24¾	12,100	29½	28	28	Standard Oil (Indiana)	15,267,030	$25	25cQ	6-15-38	2.30	50	26½	48½	32¾
35½	32¼	No sales	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
54⅛	39¾	13,500	47¼	45	46½	Standard Oil of New Jersey	26,224,767	$25	$1SA†	6-15-38	2.50	76	42	70⅜	51⅛
57⅞	45	500	49¾	48½	49	Sun Oil	2,316,484	N.P.	25cQ	6-15-38	$1 & 8% Stk.	77½	44½	91	70
3⅜	1¾	1,100	2⅜	2¼	2¼	Superior Oil Corp.	1,388,079	$1			....	7¾	1½	6¾	3
44⅞	32⅝	16,000	38⅜	36¾	37½	Texas Corp.	10,875,006	$25	50cQ	7-1-38	2.25	65⅛	34¾	55¼	28⅜
4⅞	2⅝	1,000	3¼	3	3	Texas Gulf Producing Co.	888,136	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅝
10⅛	7	2,500	8⅞	8¾	8¾	Texas Pacific Coal & Oil	888,237	$10	10c	6-1-38	.40	16⅝	5⅜	15¼	7½
15½	10⅛	7,400	12¼	11¾	12	Tide Water Associated	6,369,175	$10	25cQ	6-1-38	1.20	21⅝	13⅛	21¾	14¾
21⅝	17⅛	1,400	18⅛	17⅞	18	Union Oil of California	4,666,270	$25	30cQ	5-10-38	1.40	28¼	17½	28½	20¾
23½	20	1,200	21	20½	21	Union Tank Car Co.	1,200,000	N.P.	30cQ	6-1-38	1.60	31½	22	31⅝	22⅝
2¾	1⅝	300	2	2	2	Wilcox Oil & Gas	506,522	$5	....	5-10-28	....	6¼	1¾	5¼	2¾

•Payable in 3⅛% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending June 18 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
9⅜	5	500	6⅜	6⅜	6⅜	American Republics Corp.	1,308,049	$10	30c	12-27-37	$0.40	10	6⅝	..	..
10¼	5⅛	300	5¼	5⅛	5¼	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13¼
39	32½	100	32	32	32	Buckeye Pipe Line Co.	200,000	$50	50cQ	6-15-38	3.75	51½	36	50	39¾
110	97	No sales	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-27-38	7.00	123	95½	124¾	105
11	7¾	2,900	8¼	7¾	8	Cities Service (new)	3,714,317	$10	....	6-1-32	....	5⅜	1½	7⅜	3
2⅜	⅞	1,400	1	1⅛	1	Cosden Petroleum	462,551	$1	....	.....	....	5½	1½	4½	1½
27½	17½	1,400	19¼	19	19¼	Creole Petroleum	6,975,383	$5	50cSA†	6 10-38	1.00	38¾	20¼	39	19⅞
8¾	5½	No sales	..	..	..	Darby Petroleum	351,390	$5	25cSA	7-15-38	.50	18⅝	6½	18¼	9
3½	2	300	2⅛	2	2	Derby Oil & Refining	263,162	N.P.	....	.....	....	8⅜	2¼	6¾	1⅞
31	22⅝	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	5-2-38	4.00	47½	24½	47½	38½
42⅞	33	3,800	37¼	35¼	36½	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-38	1.00	63½	33	59	36
70	56	1,700	60¾	59	60¾	Humble Oil & Refining	8,987,840	N.P.	37½c	7-1-38	2.00	87	54⅞	80	57
19½	15	1,000	16	15¾	16	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-38	1.25	24¼	14½	24½	19¾
8¼	6⅝	100	6¾	6¾	6¾	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9¾	5½
31¼	23	2,600	23¾	23	23½	International Petroleum	14,324,088	N.P.	$1.25†‡	6-1-38	2.50	39½	23½	39⅝	32⅝
5	3	No sales	..	..	..	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8¾	2⅝	5¾	2⅝
25⅛	15⅝	400	19⅞	18¾	19½	Lion Oil Refining	434,820	N.P.	25cQ	4-20-38	1.50	34	12½	17¾	7⅞
9¼	6⅝	1,300	7¾	7½	7½	Lone Star Gas	5,533,747	N.P.	20c	4-20-38	.60	14¼	5¾	14¼	9⅞
9⅝	6½	2,600	7	6⅞	7	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	6-15-38	.50	15¼	6¾	15⅝	9⅞
8½	6⅜	700	7⅛	6⅞	7⅛	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.00	14⅝	6¼	..	..
5⅝	4½	200	5	4⅞	5	Mountain Producers	1,593,584	$10	30cSA	6-15-38	.60	7⅞	4⅛	8⅜	5
14⅝	12⅛	1,300	13⅜	13⅛	13⅜	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-38	1.00	19½	12	23	17⅜
9¼	7¼	300	7½	7⅜	7½	National Transit	509,000	$12.50	35cSA	6-15-38	1.00	12½	7¼	15¾	9¼
2⅝	1½	300	1⅝	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	No sales	..	..	..	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅜	3⅞	6¼	4¼
6	4	No sales	..	..	..	Northern Pipe Line	120,000	$10	20c	6-1-38	1.00	12¾	5¾	9¾	4⅞
7⅜	3¾	18,300	5⅛	4⅝	5	Pantepec Oil	2,441,142	$1	....	.....	....	9⅝	2¾	10⅛	3¼
3½	1⅝	No sales	..	..	..	Root Petroleum Co.	336.045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2⅛	No sales	..	..	..	Ryan Consolidated	296.931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅜	3⅜	No sales	..	..	..	Southern Pipe Line	100.000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
39	28¾	1,400	34¾	32⅝	32⅝	South Penn Oil	1,000,000	$25	50cQ†	6-30-38	3.65	56	35	44	32½
22¼	19	No sales	..	..	..	Southwest Penna. Pipe Lines	35.000	$50	50cQ	4-1-38	2.00	42	20	60	44
18	15	1,000	16½	16¼	16⅜	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-38	1.50	21⅛	14¾	23⅜	17⅛
7½	6⅛	No sales	..	..	..	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	16¼	200	18⅜	18	18⅜	Standard Oil of Ohio	753,740	$25	25c	6-15-38	1.50	45	16	40	21¾
3¼	2⅛	6,600	2⅝	2⅜	2⅝	Sunray Oil	2,006,176	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
4⅜	3½	500	4¼	4⅛	4⅛	Texon Oil & Land	936,024	$2	15cQ	6-30-38	.45	7⅝	2	9¾	5⅜
7⅝	4¼	300	4⅜	4⅜	4⅜	Transwestern Oil Co.	750,000	$10	....	.....	....	13¾	4⅝	..	..
5¼	2⅜	7,100	3½	3⅛	3⅛	United Gas Corp.	7,818,959	$1	....	.....	....	13¾	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

E. H. MOORE, president of E. H. Moore, Inc., Tulsa, has been named chairman of the tax policy and advisory committee of the Independent Petroleum Association of America, C. F. ROESER, president, announced. J. G. HUNTER, president of the West Central Texas Oil and Gas Association, Abilene, Tex., was named vice chairman.

JAMES A. VEASEY, general counsel and vice president of the Carter Oil Company, went recently to Ann Arbor, Mich., to gather material there for a paper on oil well spacing which he will read at a meeting of the American Bar Association in Cleveland, Ohio, in July. It is said the paper will be of importance to the oil industry generally. Mr. Veasey, who obtained his A.B. and LL.D. degrees at the University of Michigan, Ann Arbor, planned to visit his old school.

CURT OPEL, purchasing agent for the Atlantic Refining Company in Dallas, Tex., is on a vacation in Philadelphia, Pa.

GEORGE B. McCAMEY, Fort Worth, Tex., independent oil operator, is on a vacation trip to New York and other eastern cities.

D. B. BAKER has been named manager of the new Fort Worth offices of the Parker Drilling Company, oilfield contractors and producers of Tulsa.

DON M. CAMERON, public relations representative of the Union Oil Company of California, has been appointed supervisor of industrial training in the industrial relations and personnel department of the company, succeeding A. J. MARTINSON, who resigned.

H. L. LOCKHART, former independent operator in Kermit, Tex., has moved to Colorado, Tex., and formed the Lockhart Petroleum Corporation, heading it as president. A. M. LOCKHART, also of Colorado, is vice president and secretary of the new company.

D. H. BINGHAM, geologist with the Phillips Petroleum Company, has been transferred from the Shreveport office to Lafayette, La., where he is in charge of a new company office being opened in that city. He is succeeded as district geologist in Shreveport by JOSEPH PURZER.

JOHN F. MULLINS, Oil City, Pa., assistant superintendent of the producing department of the United Natural Gas Company, has been advanced to assistant treasurer in the accounting department. Mr. Mullins joined the company 35 years ago and has served in various executive capacities in the distribution, accounting and producing departments.

EDWIN W. PAULEY, president of the Petrol Corporation, left Los Angeles, Calif., for New York on a business trip by airplane June 21.

J. H. GULLIVER, of Muncy Station, Pa., was honored by friends and officials of the Tide Water Pipe Line Company, Ltd., recently on completion of 55 years of continuous employment with the company, GEORGE HANKS, vice president of Tide Water Associated Oil Company, parent concern, presented Mr. Gulliver with the first 55-year service emblem ever awarded by the organization. Mr. Gulliver received also a gold watch to commemorate his record-breaking service. He is 73 years old. He joined the company June 1, 1883, as a telegraph operator in Williamsport, Pa., and is now engineer at the Muncy Station, a position he has filled since 1925.

WALTER KEEFE, in charge of all shop operations for the Gulf Oil Corporation in Venezuela, has arrived in New York, where he planned to remain for several weeks.

J. E. BRANTLY, president of Drilling & Exploration Company, arrived in Lima, Peru, June 10 after flying from his Los Angeles, Calif., office. He left Lima immediately for the jungle region at the headwaters of the Amazon River system where his company is drilling a wildcat under contract for Ganzo Azul Compania de Petrolio. By traveling over the Andes Mountains by railroad and automobile, over the jungles by airplane, and on the rivers by boat, Mr. Brantly expected to reach the location before drilling started late in June. CLAUDE KELLY is locally in charge of drilling at the Ganzo Azul concession for Drilling & Exploration Company, and E. D. VAN MARTER, of the same company, is in charge of lease operations. Mr. Brantly will remain at the drilling site, which is 8 degrees below the equator on the Rio Pachitea, until drilling is well under way.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

E. H. R. Green, son of the famous woman financier, Hetty Green, is looking over his Oklahoma oil properties.

Independent oil producers of Oklahoma are complaining over the low price of oil, the policies of the Interior Department regarding Osage leases, threatened higher state taxes on oil and a few other troubles. A meeting was held in Tulsa in the past week and Bob Galbreath, Al Watts, Charley Wrightsman, Frank Gillespie, W. S. Mowris, H. C. Tyrrell and Judge Carroll told what they thought about it all.

Producers in the Bartlesville, Okla., district are tentatively planning to build a refinery to take care of their own crude output.

20 YEARS AGO

H. Reber, of Riverton, Wyo., claims he can locate oil with his feet. When he walks over an oil structure his feet tingle, Mr. Reber says. It is not likely that he will displace the man with the witch hazel crotch.

A 50,000-barrel well of Mexican Eagle Oil Company in the Tampico district is flowing wild.

The Cushing field, down to 48,000 barrels per day, is yet the largest pool in Oklahoma. The Eldorado-Augusta pools in Kansas produce 105,000 barrels per day. Both states produce 367,000 barrels per day.

10 YEARS AGO

Atlantic Pipe Line Company has started preliminary work on a 528-mile 10-inch line from its Midland, Tex., tank farm to Port Arthur, Tex.

The old Ohio fields woke up last week and yielded a 350-barrel well in the Tiffin field, Seneca County, northern Ohio, and a 395-barrel well in Perry County in the Pennsylvania Grade area.

John Crotty, 56, of Crotty & Company, oil well tool manufacturers, dies at Parkersburg, W. Va., after a long illness.

CRAIG F. CULLINAN, chairman of the board of the American Republics Corporation, Houston, Tex., and MRS. CULLINAN, are visiting in New York.

SAMUEL B. MOSHER, president and general manager of the Signal Oil Company, and MRS. LEEDJA C. ORLOFF of Los Angeles, Calif., were married recently.

WALTER B. PYRON, executive vice president of the Gulf Oil Corporation, Houston, Tex., has been elected vice president of the newly formed Texas Safety Council.

TED A. HALL, for six years head of the Tide Water Associated Oil Company's producing division in Houston, Tex., has resigned to become chief oil appraisal engineer for the First National Bank in Dallas, Tex.

E. L. GARTON, assistant chemist of the petroleum experiment station of the U. S. Bureau of Mines, Bartlesvil' , Okla., has returned home after spending nearly three months in a hospital recovering from injuries suffered in an automobile accident.

F. F. HILL, director of production for the Union Oil Company of California, has returned to his office in Los Angeles, Calif., after visiting a wildcat well which the company is drilling on Agate anticline in Sioux County, northwestern Nebraska.

RUSSELL STAFFORD KNAPPEN, assistant to the vice president of the Gulf Oil Corporation, with headquarters in Tulsa, received the degree doctor of science from Ohio Wesleyan University, Delaware, Ohio, last week. Doctor Knappen graduated from Ohio Wesleyan in the class of 1913 with the degree bachelor of science. He did graduate work at the University of Wisconsin, which conferred a master degree upon him in 1915.

PARAGRAPHS

W. E. PRATT, vice president and member of the executive committee of the Standard Oil Company of New Jersey; EUGENE HOLMAN, manager of the company's producing operations, including those of foreign subsidiaries; O. C. SCHORP, assistant to Mr. Holman, and DR. H. G. BURKS, all of New York, inspected Standard properties in North Louisiana and Arkansas last week, accompanied by the following: Carter Oil Company executives—J. J. CONRY, president; L. F. McCOLLUM, vice president in charge of exploration; F. W. FLOYD, vice president in charge of production, and E. V. WHITWELL, chief geologist; Standard Company of Louisiana executives—M. J. RATHBONE, JR., Baton Rouge, La., president; J. R. McWILLIAMS, Shreveport, La., vice president in charge of production, and S. W. DAY, Shreveport, vice president in charge of pipe line operations, and W. R. FINNEY, Tulsa, president of the Oklahoma Pipe Line Company. The trip ended with visits to Illinois and Kentucky properties Friday and Saturday, participated in by all except the Standard of Louisiana officials.

HENRY M. DAWES, president of the Pure Oil Company, received the degree of doctor of laws at commencement exercises of Marietta College, Marietta, Ohio. Mr. Dawes graduated from Marietta in the class of 1896.

A. C. TESTER, Socony-Vacuum Oil Company geologist stationed in Puerto Colombia, Colombia, will be joined this month by MRS. TESTER and their daughter, MISS T. A. TESTER, who sailed from New York aboard the Santa Elena June 17.

SAMUEL BROOKS, San Joaquin Valley production man in California, has been placed in charge of deepening operations on the old Alpaugh wildcat near Tulare Lake, taken over by ROBERT J. SULLIVAN and PETER J. YOUNGDAHL, both of Los Angeles.

E. F. FOSTER, a member of the executive staff of the West Indian Oil Company, Chile, sailed from New York last week on the return trip to Valparaiso, Chile.

R. E. HOLCOMB, of the land department of the Sunray Oil Company, Tulsa, has been placed in charge of a new office opened by the company in Los Angeles, Calif. The California office was necessitated by Sunray's acquisition last January of interests in 65 producing wells in the Wilmington and El Segundo fields. Mr. Holcomb served for years as assistant treasurer of the Skelly Oil Company. He is a lawyer, trained in production work. W. H. EASTHAM, formerly production superintendent for the company in Oklahoma and Kansas, was transferred to California several months ago to handle producing operations in that state.

PLEAS O. HARDWICK, vice president of the Atlas Oil Corporation, Shreveport, La., spent several days in Chicago on business last week.

J. W. McNAMARA, assistant manager of the Colombian Petroleum Company at Bogota, Colombia, arrived in New York last week accompanied by MRS. McNAMARA.

E. C. CASEY, in the land department of the Shell Petroleum Corporation, has been appointed district land man for the company in the East and East Central Texas districts. Mr. Casey will have headquarters in Tyler.

WILLIAM P. HAND, formerly district agent for the Southern California Gas Company in San Bernardino, has been advanced to assistant division manager in southern California. He is succeeded by R. T. McFADDEN, formerly district agent in the Redlands area, who in turn is replaced by V. C. PACK.

GEORGE LATHAM YATES, instructor in petroleum engineering at the University of Pittsburgh, has joined the engineering staff of the Phillips Petroleum Company for the summer. He is accompanying GENE STEELE, petroleum engineer with the company, on a tour of oil fields in Louisiana, Arkansas, and coastal Texas.

F. E. HATFIELD, district superintendent of the Gulf Oil Corporation for the West Texas division, has been transferred to Venezuela, South America. TOM PICKERING, assistant district superintendent, has been named to succeed him, with W. C. TODT replacing Mr. Pickering. Mr. Hatfield plans to leave Odessa, Tex., around July 15 to assume his duties in South America, where the Gulf has extensive holdings.

Banged Out a Homer

For folks musty on their history, Ennis T. Oakes, discoverer of the Lisbon oil field in Claiborne Parish, Louisiana, and Rebel Oakes, once famous as a National league outfielder, are one and the same person. Born on a farm near Lisbon, Ennis Oakes got to playing baseball while attending the Louisiana State Industrial School and soon found himself in the Greenville, Miss., team of the Cotton States league. Scouts recognized him as a comer. He played with Cedar Rapids in the Three-I league and then with the Angels in the Pacific Coast league. He was dubbed "Rebel," often shortened to "Reb," and the name has stuck.

ENNIS T. OAKES

At the close of the 1908 season Reb was acquired by the Cincinnati Reds, and following a successful year with that National league club he was bought by the St. Louis Cardinals. In the spring of 1914 he became playing manager of the Pittsburgh, Pa., team in the Federal league. Dropping out of baseball with the decadence of the Federal league, Reb became interested in oil developments in his native state and he drilled a wildcat in the Logansport area. Dry hole. He started a test near his birthplace. Troubles came in clusters. To mention one, a fishing job lost the hole and all the drillpipe at 4,243 feet. Reb just moved over 72 feet and started again. Two strikes had been called. Then he banged out a homer, completing on Christmas Day, 1936, the well which opened one of North Louisiana's major reserves.

SAMUEL F. PRATT, European manager of the Pennsylvania Grade Crude Oil Association, will return to New York late in July for a vacation and business trip.

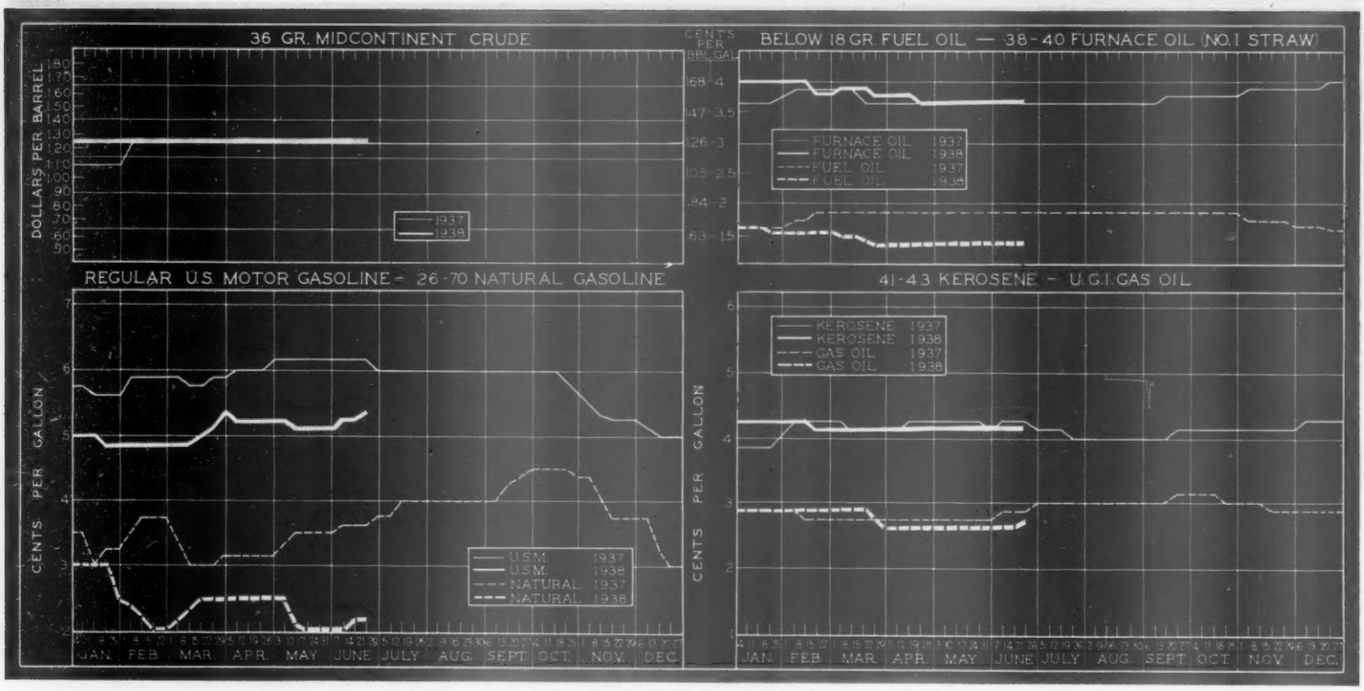
P. F. SHANNON, manager of the Tropical Oil Company in El Centro, Colombia, and MRS. SHANNON returned last week for a visit in the United States and Canada.

W. D. LATHAM, formerly toolpusher for the Humble Oil & Refining Company, has been promoted to district superintendent in charge of the recently opened Navarro Crossing district.

COL. E. WALTERS, government auctioneer of Skedee, Tex., has been employed to conduct a sale of oil and gas leases by the lease board, University of Texas, in Austin on Friday, June 24. One hundred and fifty-three separate tracts are offered in Crane, Andrews, Reagan, and Crockett counties.

MARVIN LEE, geologist of Wichita, Kans., and formerly technical adviser to the Kansas Corporation Commission, left last week for Miami, Fla., on his way to Cuba, where he will prepare a preliminary geological survey regarding oil and gas possibilities of that island. Present production in Cuba is limited to a small area 80 miles east of Havana.

WILLIAM S. FARISH, JR., son of the president of the Standard Oil Company of New Jersey, and MISS MARY STOVALL WOOD, daughter of GENERAL and MRS. ROBERT E. WOOD, Chicago, were married Saturday, June 18, in Trinity Episcopal Church, Highland Park, Chicago. Following a reception in the home of the bride, Mr. and Mrs. Farish left for a European wedding tour. They will reside in Houston, Tex.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Motor Fuel Is Gathering Strength in Group 3 Area, With Prices Rising

By T. F. SMILEY

Something like jubilation quickened the Group 3 gasoline market this week. New aggressiveness and vigor were plainly apparent. Prices had risen to a point which enabled some refiners to break even, and that modest bit of good fortune assumed the proportions of a godsend in the light of the fact that for months the red-ink bottle had been used to record financial results of plant operations. Material was positively scarce. Some refiners were 8 to 10 days behind on shipments, instructions having come in on them in such a stream.

Nobody Anxious to Sell

"I've just got through calling up 19 refineries in an effort to wangle a few cars of gasoline out of them," said the sales manager of one company whose output comes far short of meeting customer demands. "Not one of them was among our regular accounts. Only two out of the whole lot gave me any encouragement whatever. I got a little from one. The other named a price so high he knew I couldn't pay it. I don't recall a time in all my experience when gasoline, in point of available supply, was so tight as it is right now."

Fear of reductions in the price of crude, which haunted the refinery market for months, has vanished. If the large companies keep faithfully to operating schedules which they have adopted, feeling in the trade is that a bounding market is in the making. "We're likely to be getting 6 cents for the regular grade soon," was a prediction. Major refiners were continuing to buy from smaller concerns rather than increase the output from their own plants. So strong was the upward pull of prices that with a narrow spread between the high and low of ruling quotations, more material was reported moving at the high than at the low. Jobbers were laying in stocks for the Independence Day holiday, another triple-header, with indications there would be sharp competition for supplies.

Natural gasoline was looking up, with a distinctly firmer tone. There was more active demand on the part of jobbers, who recently have been buying stabilized grades chiefly, owing to the wide disparity between the prices for natural and those for the refined product. A fairly substantial demand for 12- and 18-pound was reported, with fewer inquiries for 14-pound. Inventories were causing no uneasiness, any excess material in the hands of small manufacturers being absorbed by larger units with more ample storage facilities. Next month will see blending for fall use, and with demand gradually stiffening in the meantime, the trade generally expressed confidence that the worst was over for 1938.

U. G. I. gas oil, sluggish for many weeks, was showing signs of active pickup, with quotations rising. This material, it was explained, was being utilized for cracking purposes, owing to the increasing scarcity of straightrun gasoline.

Wax Coming Back to Life

Wax, in a state of coma since last February, was coming back to life, with quotations up.

The lubricant group seemed to be in a faintly improved position, owing, refiners said, to wholesale shutdowns and curtailments which went into effect last spring. Barnsdall Refining Corp., which closed its neutral and bright stock plants at Barnsdall, Okla., last January, has resumed operations.

Heating oils were showing a somewhat sturdier tone in response to buying for fall storage, which is now on, jobbers evidently having become convinced that they will see no lower quotations this year than those now prevailing. Kerosene was moving satisfactorily, as was range oil, bought largely for tractor use. Heavy industrial fuels were still deeper in the cellar.

Refined Oil Market Barometer

With the heavy summer demand for gasoline under way, that division of the market shows improvement, with prices headed upward. In the Mid-Continent area refiners are behind on shipments. Buying for fall use is keeping fuel oils steady. Natural gasoline firmer, with better prices in prospect. Slackening demand from railroads and industries is deepening the inactivity of heavy oils.

MID-CONTINENT. Gasoline buoyant. Naturals steadier. Heating oils active.

EAST COAST. Heavy fuel breaks sharply. Gasoline in better position.

GULF COAST. Gasoline showing improvement. Gas oils increasingly firm.

CALIFORNIA. Fuel oil weak and general market quiet. No price changes.

PENNSYLVANIA. Increased activity appearing in wax market. Gasoline improving.

CHICAGO. Gasoline firmer. Heavy burning oils dull. Kerosene spotty.

Slack Sales and Rising Stocks Upset Bunker Fuels in East

By H. STANLEY NORMAN

NEW YORK, June 21.—Pressure of slack sales and mounting stocks caused a break Monday in the Bunker C fuel oil market, which was lowered 10 cents a barrel at most Atlantic Coast terminals by the Standard Oil Co. of New Jersey. The New York Harbor price on Bunker C fuel oil is now 95 cents a barrel. The Standard Oil Co. of Louisiana was expected to cut 5 cents a barrel on Bunker C at Gulf Coast terminals, making the price there 75 cents a barrel.

The bullish tone of the motor fuel market in the northeastern section of the country continued last week, although price movement was halted to consolidate the gains made in the preceding two weeks of June.

It is anticipated that motor fuel consumption figures for May will show considerable improvement over April when domestic demand was slightly below that for the same month in 1937, exports having been entirely responsible for the gain in over-all movement.

Major companies are still active in the Gulf Coast market buying high octane gasoline for subsequent leading. This type of business coupled with exports on the increased scale have combined to relieve selling pressure on several Gulf Coast suppliers. There is the further realization on the part of north Atlantic buyers that summer consumption rates have not been reached since in general the weekends have been blighted by at least one day of threatening and rainy conditions. With consumption having reached reasonably satisfactory proportions despite weather handicaps, it is realized by dealers that they must be prepared to meet accelerated demand in July, August and September, assuming that weather conditions will be more conducive to travel during those months.

Practically all dealers in New York harbor territory are quoting 6¾ cents per gallon on 65 octane gasoline to the tankcar trade. Deliveries of the same material by barges may be obtained at 6½ cents, but the market is up a quarter of a cent, in the opinion of practically all traders. Improvement has also spread to service station business in most sections, although price shading in metropolitan New York continues with some outlets posting 92 cents for six gallons, including taxes.

Practically all dealers in New Jersey are now dictating minimum resale prices under authority of the state's new fair trade law. Effective June 21, Standard Oil Co. of New Jersey increased the consumer tankcar and minimum retail resale prices of motor fuel in New Jersey. Consumer tankcar prices were advanced .15 cent, making Essolene (regular) 7.4 cents a gallon in Atlantic City and Newark. Posted dealer tank-wagon prices were unchanged. However, the net price to divided dealers for Essolene will be 8.9 cents, while that to undivided dealers will be 8.4 cents a gallon. The minimum retail resale price in both Atlantic City and Newark was increased .6 cent to 11.9 cents a gallon, exclusive of taxes. Effect of the minimum retail resale adjustment is to give undivided dealers a margin of 4 cents, instead of 3.7 cents, while split accounts will have a margin of 3.5 cents instead of 3.2 cents. Gallonage has held up reasonably well where minimum resale prices have been stipulated.

Boston gasoline prices have moved abreast of postings in New York and at least two companies, Cities Service and Socony-Vacuum elevated their tank-wagon quotations there a half cent per gallon. Reports were current that some dealers in both New York and Boston are asking 6¾ cents per gallon for 65 octane plus motor fuel in barges which may be the forerunner of another general advance of a quarter of a cent.

Most Gulf Coast suppliers are asking 5½ cents per gallon for 65 octane plus gasoline for coastwise movement while 5¾ cents is the general price quoted on 68-70 octane motor fuel. Gradual absorption of "distress" motor fuel from inland refining districts, hastened by the shutting down of several plants in East Texas and elsewhere, has relieved pressure on the domestic situation materially during the past three weeks. Oklahoma refiners were reported thinking in terms of a full cent higher gasoline prices in the near future, which, if realized, will probably bolster the Gulf Coast market.

Key figures in the industry with offices in New York pointed out last week that the next two or three months constitute the critical period for the business this year and the first half of 1939. They cautioned against the natural impulse to let rates of refinery operation keep pace with the current and near future demand. Warning was sounded that such a course of procedure would prevent liquidation of the 8,500,000 to 9,000,000 bbls. of gasoline now on hand in excess of 1937 stock levels and that this surplus, along with normal inventory withdrawals, must take place in the next 90 days if healthy conditions are to prevail next fall, winter and spring.

Several refiners are already reported using portions of their gas oil production for cracking stock which normally would go to build up winter fuel inventories. This is particularly true on the Gulf and East Coast where fuel oil stocks have mounted rapidly in the face of slack demand. No immediate effect on the products market was apparent last week following the recent reduction in Pennsylvania crude oil prices. Lubricating oil shipment instructions are reaching refiners satisfactorily from jobbers.

The export interest remains centered on motor fuel and crude oil so far as the Gulf Coast area is concerned. Inquiries in the open market, however, are unchanged and practically all of the movement is confined to loading instructions placed against previously executed contracts.

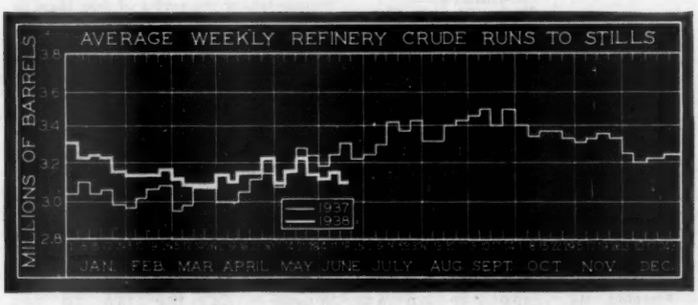
(Continued on Page 112)

A. P. I. Weekly Refinery Statistics

Week Ending June 18, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	498,000	22,584,000	12,130,000
Appalachian	88.4	105,000	3,197,000	1,160,000
Indiana, Illinois, and Kentucky	92.4	397,000	13,493,000	8,538,000
Oklahoma, Kansas, and Missouri	84.7	262,000	7,362,000	4,106,000
Inland Texas	56.6	113,000	2,387,000	1,699,000
Texas Gulf	95.7	758,000	11,378,000	10,620,000
Louisiana Gulf	96.6	120,000	3,030,000	3,407,000
North Louisiana and Arkansas	63.7	44,000	490,000	822,000
Rocky Mountains	69.7	42,000	2,042,000	842,000
California	90.9	452,000	14,083,000	90,893,000
Total reported	89.0	2,791,000	80,046,000	134,217,000
Estimated unreported	.....	289,000	4,430,000	2,790,000
*Estimated total	.....	3,080,000	84,476,000	137,007,000
*Estimated total previous week	.....	3,155,000	86,149,000	136,097,000
*June 19, 1937	.....	3,320,000	76,574,000	99,215,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending June 4, 1938	298,266,000 barrels
Week ending May 28, 1938	*300,986,000 barrels
Week ending June 5, 1937	308,305,000 barrels

*Revised by Bureau of Mines.

Figures for June 4 and May 28 do not include stocks of heavy, unrefinable California crude which were 17,295,000 bbls. and 17,389,000 bbls. respectively. Figures on heavy crude for year ago not available.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of June 21, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	13.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡8.8
Mason City	15.8	14.3	4.0	‡10.7
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	10.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	15.3	13.8	4.0	9.0
Grand Rapids	14.8	13.8	4.0	9.7
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†11.2
South Bend	17.6	16.1	5.0	†9.4
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	8.5
St. Louis*	15.2	13.7	4.0	8.0
St. Joseph*	14.9	13.4	4.0	9.8
Wichita, Kans.	14.4	11.6	4.0	7.8

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over 7 cents; Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Atl'tic. City, N. J.	13.4	11.4	4.0	8.0
Newark	13.4	11.4	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.1
Hickory	19.15	16.65	7.0	12.5
Mt Airy	18.95	16.45	7.0	12.3
Raleigh	18.25	15.75	7.0	11.6
Salisbury	18.75	16.25	7.0	12.2
Charleston, S. C.	17.25	14.75	7.0	10.6
Columbia	18.25	15.75	7.0	11.6
Spartanburg	18.95	16.45	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank-wag.
Atlanta, Ga.	20.0	17.0	7.0	*12.0
Augusta	21.0	18.0	7.0	*14.0
Macon	21.0	18.0	7.0	*14.0
Savannah	19.5	16.5	7.0	*12.0
Birm'ham, Ala.	21.0	18.0	8.0	12.0
Mobile	21.0	18.0	9.0	11.0
Montgomery	21.0	19.0	9.0	13.0
Jackson, Miss.	19.5	16.5	7.0	*12.5
Vicksburg	19.5	16.5	7.0	*12.5
Jacks'ville, Fa.	22.5	17.5	8.0	11.0
Miami	20.5	17.5	8.0	11.0
Pensacola	22.0	19.0	9.0	12.0
Tampa	19.5	16.5	8.0	10.5
Lexington, Ky.	19.0	16.0	6.0	11.0
Covington	18.5	15.5	6.0	11.0
Louisville	19.0	16.0	6.0	10.5
Paducah	19.0	16.0	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Denver, Colo.	14.0	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	13.0	5.0	13.0
Butte, Mont.	19.5	6.0	15.5
Billings	19.5	6.0	13.0
Helena	20.0	6.0	15.5
Great Falls	19.0	6.0	15.5
Salt Lake City, Utah	18.0	5.0	16.0
Twin Falls, Ida.	21.0	6.0	18.0
Boise	21.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Di-vided dlr.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	16.5	15.5	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank-wag.	Gasoline Tank-car	Gasoline Inc. tax	Kero. tank wag.
Albany, N. Y	14.5	12.5	5.0	9.0
*Met. N. Y.:				
M'htt'n, Br'nx	14.0	12.5	5.0	8.75
Staten Island	14.0	12.5	5.0	8.75
Q'ns & Bklyn.	14.0	12.5	5.0	8.75
Buffalo	14.0	13.0	5.0	7.5
Rochester	15.0	13.2	5.0	8.5
Syracuse	14.5	13.1	5.0	9.0
Boston, Mass.	13.0	12.0	4.0	8.5
Portland, Me.	15.0	13.0	5.0	8.75
Manch'ter, N.H.	15.0	13.6	5.0	9.0
Burlington, Vt.	15.4	13.4	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nav.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	15.0	6.0	9.5
Norfolk	18.4	16.9	6.0	10.3
North Platte	18.8	16.9	6.0	11.0
Scotts Bluff	19.5	16.5	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.0	16.5	*10.0	†12.0
Baton Rouge	17.0	14.5	8.0	12.0
Alexandria	17.5	15.0	8.0	10.5
Lafayette	18.0	15.5	8.0	12.5
Lake Charles	18.0	15.5	8.0	12.5
Shreveport	16.5	14.0	8.0	9.5
Kn'xv'lle, Tenn.	20.0	17.5	8.0	14.0
Memphis	18.0	15.5	8.0	12.0
Chattanooga	19.5	17.0	8.0	13.5
Nashville	19.0	16.5	8.0	10.5
Bristol	19.0	17.75	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	12.5	....	5.0	9.75
Springf'd, Mass.	13.5	....	4.0	8.0
Worcester	13.0	....	4.0	8.5
Hartford, Conn	13.6	....	4.0	7.0
New Haven	13.5	....	4.0	7.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	7.0
Tulsa	14.0	5.0	6.0
Ft. Smith, Ark.	14.25	5.0	7.5
Little Rock	16.75	7.5	8.0
Texarkana	14.0	5.0	8.5

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	27.0	7.0	22.0
Saskatoon, Sask.	29.8	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	24.0	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Continental Oil Co. June 13 advanced tank-wagon kerosene 1 cent in Tulsa and Oklahoma City; June 16 reduced kerosene 1 cent in Tulsa; May 2 advanced dealer gasoline .5 cent at Helena and reduced dealer gasoline .5 cent at Great Falls.

Socony-Vacuum Oil Co., Inc., June 8 reduced dealer gasoline .5 cent in Boston and Manchester.

Standard Oil Co. of Indiana June 20 advanced tank-wagon kerosene in Des Moines .5 cent.

Atlantic Refining Co. June 9 reduced tank-wagon kerosene .5 cent in Hartford; June 8, reduced tank-wagon gasoline 1 cent in Wilmington; April 4, reduced tank-wagon kerosene 1 cent in Worcester; May 20, reduced tank-wagon kerosene .75 cent in Wilmington; May 15, reduced tank-wagon kerosene 1 cent in Hartford.

Standard Oil Co. of New Jersey June 20 increased consumer tankcar gasoline .15 cent in Atlantic City and Newark.

New York Market

(Continued from Page 111)

Business and interest in wax has shown considerable improvement during the first half of June and prices are up from 1/10 to 3/10 of a cent per pound. Inquiry for wax is more active both on the Atlantic Coast for export and at inland refining points, such as western Pennsylvania, for domestic shipment.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of June 21, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane		.05⅛
70-72 octane (regular)	.05⅜	.05½
60-62 400 grades:		
62 oct. and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane		.05¼
70-72 octane (regular)	.05⅜	.05½
64-66 375	.04⅞	.05
68-70 360	.05⅛	.05¼

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane		.05¼
70-72 octane (regular)	.05⅜	.05½
60-62 400	.04⅝	.04¾
64-66 375	.04⅞	.05

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below		.04½
63-66 octane	.05	.05⅛
67-69 octane	.05⅜	.05½
70-72 octane (regular)	.05⅝	.05¾

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below		.04¾
67-69 octane		.05¼
70-72 octane (regular)	.05⅜	.05¾

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane	.05⅛	.05¼
70-72 octane (regular)	.05⅜	.05½
60-62 400 grades:		
62 octane and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane	.05⅛	.05¼
70-72 octane (regular)	.05⅜	.05½
64-66 375	.04¾	.05
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05¼
65 octane	.06½	.06¾
68-70 octane	.07	.07¼

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¾	.08¼
58-60 400, 65 oct. and higher	.08	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06¼	.06½
Philadelphia	.06¼	.06½
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.07
Philadelphia	.06½	.07
Boston	.06¾	.07
Baltimore	.07	.07¼
Charleston, S. C.	.07¼	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05⅛
60-64.9	.05¼	.05¼
65 octane and higher	.05⅜	.05½
68-70	.05¾	.06

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¾	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02⅛
Grade 18-55		.02½

NORTH TEXAS—

Grade 26-70		.02
Grade 18-55	.02⅜	.02½

CALIFORNIA—

75-85 375-390	.06½	.07

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.02⅜

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-520 i.b.p., 110-125 flash, 500-520 e.p.	.04	.04⅛
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04⅜	.04½

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04¼
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅛	.04⅜

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅜	.04⅝

PENNSYLVANIA (inland refineries)—

45		.05
46		.05⅛
47		.05¼

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43	.05¼	.05½

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03⅝	.03⅝
No. 2 dark, 32-36	.03¼	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¼
*No. 2		.04⅛
*No. 4		.04⅛

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil		.02¾
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.55	.60

NORTH TEXAS—

U.G.I. gas oil		.02¾
No. 4, low cold test, 24-28	1.00	1.10
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.55	.60

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low cold test, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03¼	.03¾

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.20	1.40
24 plus diesel, per bbl.	1.15	1.40
24 plus diesel (bunkers)	1.30	1.55
12-16 (bunkers at tidewater)	.80	.90
10-16 (cargo lots)	.70	.85
12-17 (tankcars)	.60	.90
10-17 (high sulfur)	.55	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus diesel, per bbl.	1.30	1.50
San Francisco:		
24 plus diesel, per bbl.	1.45	1.55
24 plus diesel (bunkers)	1.50	1.55
10-16 (bunkers)		.95

GULF COAST—

No. 2 fuel		.03¼
43-47 diesel		.03½
48-52 diesel		.03½
53-57 diesel		.03⅝
Bunkers (bulk cargoes)		.70
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04⅛
28-30 diesel (lighterage 6¼c per bbl.)		1.75
28-30 diesel (tankers)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. harbor)		1.05
Industrial fuel (tankcars)	.04	.04¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14½	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks ((Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.15	.15½
15 pour test	.14	.14½
20 pour test	.13	.13½
25 pour test	.12	.12½
Steam refined:		
600	.08½	.09
650	.10½	.11½
600 Pennsylvania flash	.11	.13
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08¾	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pour test	.14	.15½
10 pour test	.13	.13½
15 pour test	.12½	.13
25 pour test	.11½	.12
180 vis. at 70° F., 3 color:		
25 pour test	.13	.13½
200 vis. at 70° F., 3 color:		
Zero pour test	.15½	.16
10 pour test	.14½	.15
15 pour test	.14	.14½
25 pour test	.13	.13½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0200	.0205
124-126 (a.m.p.) w.c. scale	.0200	.0205

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) w.s.		.0185
124-126 (a.m.p.) y.s.		.0185
Petrolatum in barrels, carload lots:		
Dark green	.02	.02⅛
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05¼	.05¼
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.04¾
60-62 400	.05	.05⅛
61-63 390	.04¾	.04⅞
64-66 375	.04⅞	.05

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¼	.05½
65-69 octane		.05¾
Above 69 octane		.06¼

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04
41-43 water white	.03⅞	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright Stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude Scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28,1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)§	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. and Ohio Oil Co. †Ohio Oil Co. ‡Continental Oil Co., Texas Co. (April 1, 1938). §Hudson Oil Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Dec. 29, 1937)†	.80
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.
†McClanahan P. L. and Simrall.
Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.	
Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective June 13, 1938)

Bradford, Pa.	$1.80
Allegany, N. Y.	1.80

SOUTH PENN OIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.80
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.46
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.40
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.30
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$1.73
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	1.72
Includes Tidioute district.	
Group C	1.71
Includes Turkey and Tidioute districts.	
Group D	1.70
Includes Bear Creek and Porkey districts.	
Group E	1.68
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective June 13, 1938)

Cabin Creek, W. Va.	$1.40
Bradford Hollow, W. Va.	1.40
Kelly Creek, W. Va.	1.40

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Crude Oil Price Changes

Kanotex Refining Co. of Arkansas City revised its price schedule upward effective June 16. Starting at 34-34.9 degrees at $1.03, 2 cents is added for each degree upward to 40 degrees and over at $1.15. The company some time ago cut its prices 25 cents per barrel on all grades it buys. The readjustment still makes the company 15 cents under the prevailing market.

Rocky Mountain Runs

Daily average production estimates for week ended June 18:

	Bbls.
WYOMING	
Salt Creek	15,690
Big Muddy	1,270
Badger Basin	150
Black Mountain	150
Dallas Derby	590
Dutton Creek	50
Elk Basin	30
Frannie	2,530
Garland	2,350
Grass Creek	3,250
Hamilton dome	510
Hidden dome	140
Hudson	260
LaBarge	940
Lance Creek	13,460
Lost Soldier	1,720
Medicine	3,110
Midway	30
Oregon Basin	2,050
Osage	950
Pilot Butte	20
Quealy dome	760
Rock River	110
South Casper	450
Spindletop	40
Poison Spider	280
Teapot	20
Warm Springs	110
Wertz	1,330
Total Wyoming	52,350
MONTANA	
Border	110
Cat Creek	620
Cut Bank	8,020
Dry Creek	1,400
Kevin-Sunburst	3,770
Pondera	560
Total Montana	14,480
COLORADO	
Florence	190
Fort Collins and Wellington	320
Iles dome	2,150
Moffat	370
Orchard	50
Rangely	80
Tow Creek	200
Price	450
Total Colorado	3,810
NEW MEXICO	
Cooper	4,340
Eaves	790
Eunice	22,290
Hardy	1,800
Hobbs	12,820
Jal	1,070
Langlie	3,230
Lynch	510
Lynn	750
Mattix	2,500
Monument	23,120
North Lynch	40
Penrose	4,620
Rhoades	140
Skelly	1,580
South Eunice	2,610
Vacuum	1,550
Artesia-Maljamar	6,080
Getty	100
Hogback	200
Rattlesnake	660
Table Mesa	90
Total New Mexico	90,890
Total Rocky Mountain region	161,530

Crude Prices by Gravities

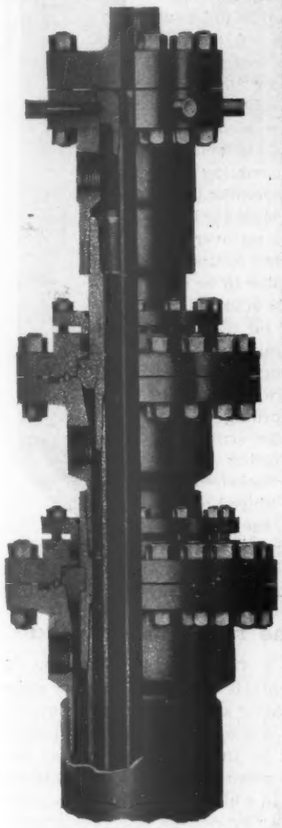
	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$.95	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.95	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel.29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	....	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

New or Improved Equipment

Extended Recessed Coupling Is Placed on Market by Rector

An extended recessed coupling built on the same principle as the regular recessed coupling in Rector casing-heads is now manufactured by Rector Well Equipment Co., Fort Worth, Tex., making the combination of Rector casing- and tubing-head hook-up, in effect, an integral unit.



This extended recessed coupling permits mounting a 10,000-pound test tubing-head directly on the recessed coupling. The manufacturer explains that it retains the repackable feature of Rector heads not feasible with spool-type construction. The thread used in landing pipe is not used as a permanent connection where the extended recessed coupling is used, because the coupling also has an inside thread for landing purposes. A safety thread is provided below the christmas-tree for unscrewing and stabbing over, in case of a wild well. On a 7-inch oil string an 8⅝-inch outside thread is provided on the recessed coupling so that a 7-inch tubing-head with an 8⅝-inch inside thread may be used. On 5-, 5½- and 5¾-inch oil strings an outside thread is provided on the recessed coupling, either V-type, rounded, or any of the customary square threads, at the purchaser's option.

The extended recessed coupling makes the combination of Rector casinghead and tubing-head far more compact and rigid.

Bulletins, Booklets and Other Literature for the Trade

A folder devoted to a new line of bronze-mounted and all-iron U-bolt gate-valves is being mailed on request by Jenkens Bros., 80 White Street, New York.

Among informative articles appealing to oil men in the latest number of the Wyatt Way, published by Wyatt Metal & Boiler Works, Dallas, Tex., is "Out of the Test-Tube Came Steel Towers."

A booklet of interest obtainable from S. R. Dresser Manufacturing Co., Bradford, Pa., is entitled "How to Join and Repair Pipe." It tells how pinholes, leaks and splits may be repaired easily, quickly, and permanently with Dresser couplings and repair products.

Bulletin No. 12, offered by Hanlon-Waters, Inc., Tulsa, illustrates and describes the Hanlon-Waters Type 2000 boiler-fuel control unit for oil-field boilers.

How the counsel of a rope expert aids in solving some problems of the oil field is told in the current issue of the Yellow Strand, published by Broderick & Bascom Rope Co., St. Louis, Mo.

Featuring a story on the increasing use of automobile trailers for tourist and commercial use and giving facts concerning this comparatively new industry, the current issue of the Lufkin Line has been released for distribution by Lufkin Foundry & Machine Co., Lufkin, Tex.

Harnischfeger Corp., 4400 West National Avenue, Milwaukee, Wis., manufacturer of P&H-Hansen welders, announces bulletin R-5 which gives complete and specialized information on each of the Smootharc welding electrodes.

J. J. Stephens, Tulsa, has prepared a set of tables for reducing the observed temperatures and A.P.I. gravities to the standard temperature of 60° F. These tables, especially convenient when making interpolations, are based upon the national standard petroleum oil tables of the U. S. Bureau of Standards.

Seven new bulletins are announced by the News Bureau of General Electric Co., Schenectady, N. Y. They are: GEA-2571B, reconditioning flooded electric equipment; GEA-1437C, gear-motors; GEA-1607B, direct-current generators and exciters; GEA-2052A, new track-type limit switch; GEA-67E, float switches for use with automatic pumping equipment for water-level control; GEA-2889, magnetic motor-starting switches; GEA-1542C, Type B direct-current motors.

Radiography in the valve and fitting industry, written by J. J. Curran, research metallurgist for Walworth Co., 60 East Forty-second Street, New York, is the subject of an article in the newest issue of Walworth Today.

Among articles of special interest in the latest issue of Nickel Cast Iron News, published by the International Nickel Co., Inc., New York, are one on "Oil Refinery Parts Cast in Corrosion-Resistant Irons" and one on "Nickel Cast Irons in Diesel Engines."

A 36-page booklet, illustrating various installations of diesel and gas engines, has been published by Worthington Pump & Machinery Corp., Harrison, N. J. Application of diesel and gas engines in every field where power is an essential factor is demonstrated.

"The Inside Story of Crane Plug Disc Globe and Angle Valves" is told in an eight-page, two-color booklet released by Crane Co., 836 South Michigan Avenue, Chicago. A full-page table lists the essential characteristics of each member of the Crane plug disc family.

A new 602-page catalog covering the company's line of valves, fittings, pipe, and tools, has been published by Walworth Co., 60 East Forty-second Street, New York.

Light Weight, Flexibility Are Features of Big Drew Slings

Completion of two giant wire-rope slings, each with a strength of 176.4 tons and with a joint load-carrying capacity when used in a basket hitch of over 98 tons, has been announced by Macwhyte Co., Kenosha, Wis.

One of the features of these new Drew slings is their light weight and flexibility, according to

Jim Drew, their designer. They are made from an endless element of 1-inch wire rope, braided to form a flat six-part body. The natural loop eyes at either end are formed by the endless wire rope. This patented construction is said to make the slings easy to handle and load, and gives them a high safety factor. The two slings were made to special order.

More Room For Merco Nordstrom

Merco Nordstrom Valve Co. and Pittsburgh Equitable Meter Co. have moved into larger quarters at 2808 East Twelfth Street, Los Angeles, Calif. A new building provides more attractive office space and increased warehouse facilities. Larger stocks will be carried. A railroad siding permits carload shipping and an ample platform gives convenient access for truck shipments. The location is central for oil-field and gas-trade shipments.

Foreign Matter Removed From Gas Line by Ensign Filter

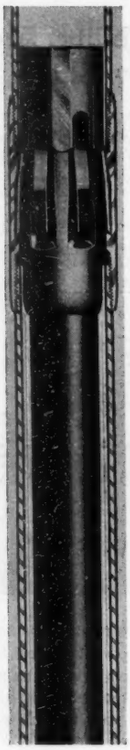
The Ensign natural gas filter shown in the illustration, was designed for installation in the gas supply line, to filter out any foreign matter that

might be present. This filter is so constructed that it may be installed in a vertical or horizontal pipe line. The inlet and the outlet are plainly marked. The filtering element is easily removed for cleaning or replacement. The filter is made in two sizes for installation in 1-inch and 2-inch pipe.

Ensign Carburetor Co., Ltd., Los Angeles, Calif., is now offering the new natural gas filter as another addition to its line of natural gas and butane carburetion equipment.

Security Engineering Develops Safe, Simple Liner Hanger

Security Engineering Co., Inc., has announced a fundamentally new type of liner-hanger which it says has no slips, no complicated setting mechanisms and nothing to get out of adjustment. It is said to eliminate danger of hanging the liner too high or too low in the hole, and when set it will not move down the hole under the heaviest liner load.



This new Security liner-hanger consists essentially of two parts, the hook collar and the liner-hanger itself. The hook collar is made up in the casing string so that when the casing is landed this collar will be at the point where the liner is to be supported. The hanger makes up on top of the liner and has strong spring fingers equally spaced around its circumference. These springs are so designed that, as the liner is lowered through the casing, the ends of the springs are pressed in and cannot contact the casing surface. This prevents any possibility of the fingers catching in the regular couplings. However, when the hanger reaches the specially designed recess of the hook collar, the springs expand, catch on the supporting shoulder, and lock the hanger against further downward movement. The entire setting operation is described as foolproof, for it is only at the recess in the supporting collar that the spring fingers expand outwardly to lock the hanger against further downward progress. Withdrawal is simple and positive, for a straight pull on the run-in string contracts the springs and frees the hanger.

Each individual spring in the hanger will carry a safe load in excess of 20,000 pounds and the various sizes of hangers are designed with a sufficient number of springs to afford an ample safety margin for the heaviest loads.

Since the hook collar becomes an integral part of the casing string it is designed with an outside diameter no greater than the coupling and an inside diameter no smaller than that of the casing. Nothing projects on either the inside or outside of the string to interfere with running the casing or with any tools that subsequently may be run through the casing. The minimum metal thickness of the Security hook collar is the same as that of standard casing couplings, and the hook collar has a tested strength in excess of A.P.I. standards. The hook collar can be machined and threaded to fit all types of casing, whether plain, flush-joint, or upset, and all threads conform to manufacturers' standards. This means that the Security hook collar liner-hanger can be used with equal efficiency on practically any casing string.

New Edition of Hobart Manual

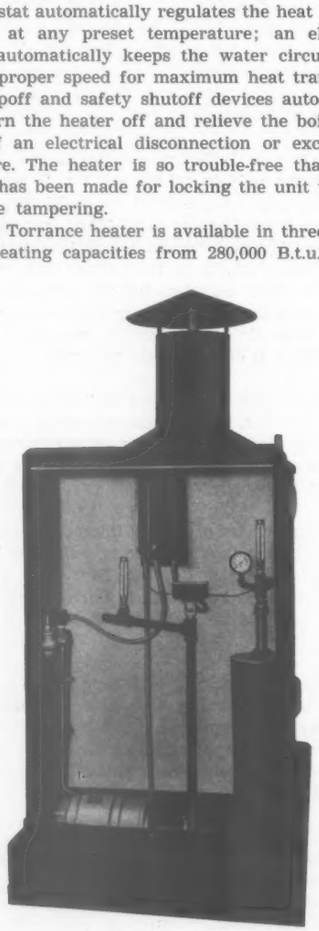
New developments in arc welding, rods, machines and technique appear in the new edition of "Arc Welding and How to Use It," a 340-page manual brought out by Hobart Brothers Co., Troy, Ohio, a necessary part of every welder's library. The book is divided into six sections, including general information on the development of arc welding, weldability of metals, applications or uses, various types of joints and welds, welding rods, welding speeds and costs; practical welding lessons, carbon arc welding and cutting and instructions for welding of nonferrous metals, special information, and a discussion of modern welding equipment. The book is priced at $1.50 in the United States and $2 in Canada and foreign countries.

Operating Economy Achieved in New Crude-Oil Heater

Of interest to oil-field operators is the new Torrance heater offered by Torrance Heater Co., Box 144, Torrance, Calif., for heating crude oil in the field. It is compact, and its operating economy is said to be revolutionary. The unit operates on the heat-saving closed-circuit principle, and uses superheated water as the heat-circulating medium. A spiral heating coil, scientifically designed to expose the maximum heating surface to a gas flame, quickly heats water under high pressure to over 350° F. This superheated water then is circulated through a heat-exchanger (which may be coils in a sand-trap, sump, or storage tank, or a jacketed pipe line), where it gives up its heat to the oil and returns to the base of the unit again. There is no loss of water, for the circuit is completely closed and the same fluid is circulated over and over again. Only the heat actually absorbed by the oil, along with the small amount lost in the conduit pipe, need be replenished by the heater.

An important feature is the heater's automatic operation. The water in the circulating system is automatically maintained at the right level; a thermostat automatically regulates the heat in the system at any preset temperature; an electric pump automatically keeps the water circulating at the proper speed for maximum heat transfer; and popoff and safety shutoff devices automatically turn the heater off and relieve the boiler in case of an electrical disconnection or excessive pressure. The heater is so trouble-free that provision has been made for locking the unit to discourage tampering.

The Torrance heater is available in three sizes with heating capacities from 280,000 B.t.u.'s per



hour to 1,200,000 B.t.u.'s per hour. Each unit is self-contained in a waterproof, weather-proof and tamper-proof steel case. A folder fully describing the heater may be obtained by writing the manufacturer.

Improved Outside Pipe-Cutter Regular Part of Homco Line

The C-M-P improved outside pipe-cutter is now a regular part of the line of specialized tools being run by Homco Cutting & Fishing Tool Service, a division of Houston Oil Field Material Co., Houston, Tex.

This drillpipe cutting tool is mechanically operated. It employs no wedge-ring in its design, the shell of the tool serving as a wedge-ring, allowing the operator to go over the pipe to be cut with a minimum of annular space between the tool and the "fish." The cutter assembly works independently of the shell of the tool, the distance between the point of cut and the engaged point remaining the same. When the operator picks up on the tool, the shell (or body of the tool) moves up over the cutting assembly and forces the knife against the pipe to be cut. The cutter knife is actuated by the inclined plane on the shell, which is substituting for a conventional wedge ring.

In event of failure to make the cut, this tool, according to the manufacturer, easily strips out because only the cutting edge of the knife has to be broken off by reason of it being hinged at the top, instead of the bottom, where the entire knife would lie against the pipe to be cut.

Larger Home For Walter Ruska

Walter Ruska & Co., Inc., manufacturer of scientific instruments, is erecting a one-story shop and laboratory building at 2332 Bellaire Boulevard, Houston, Tex. Of attractive, modernistic design, the structure will be five times as large as the present one, with room provided for expansion. It is to be finished in white stucco with black glass and chrome trim. An investment of approximately $35,000 will be represented in the lot, building and equipment. The structure, 40 by 85 feet, will be of brick, hollow tile and concrete. Offices will occupy the front of the edifice, with an instrument calibrating room and an electrical laboratory on one side and a petroleum engineering laboratory on the other. In the rear will be the instrument shop.

Here and There With Men Who Manufacture Equipment

E. N. Spiars will represent, as division sales engineer, the Reed Roller Bit Co. in the northern division, consisting of Kansas, Oklahoma, and northern Texas. His headquarters will be in Tulsa.

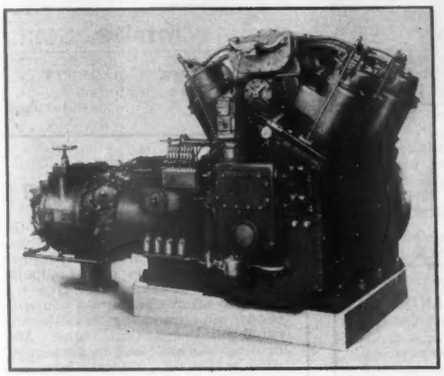
L. S. Baash, president of Baash-Ross Tool Co., Los Angeles, Calif., was a business visitor recently in the New York offices of I. Frank Brown, who handles the Baash-Ross line in the export field.

Ralph McPeake, known in mechanical rubber goods sales circles for more than 25 years, has been named Detroit, Mich., district manager of the B. F. Goodrich Co. mechanical goods division.

Timken Roller Bearing Co. has appointed David T. Marvel manager of tube sales. He will have full charge of the sales of all forms of Timken seamless steel tubing. His headquarters will be at the main office in Canton, Ohio.

Cooper-Bessemer Compressor Built for Oil and Gas Field

The Cooper-Bessemer Corp., Mount Vernon, Ohio, has announced its compact and powerful Type G-MV compressor unit, designed primarily for oil- and gas-field applications. This new two-



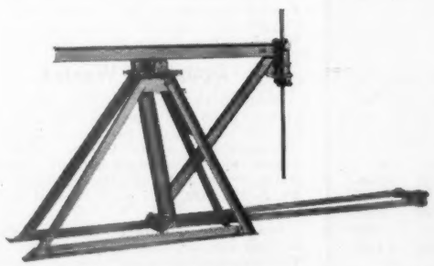
cycle compressor is offered as an answer to requests for greater horsepower in smaller, yet rugged, units. Rated 100 horsepower per cylinder at a conservative speed of 300 r.p.m., and built in 4-, 6-, and 8-cylinder sizes, the Type G-MV combines V-type power cylinders, set vertically, with compressor cylinders arranged horizontally.

Unusual compactness is said to make the entire unit easily transportable, reduce the amount of floor space and materials necessary for its housing, lower foundation costs, and add to ease of installation. With compressor cylinders, these units have an overall width of 14 feet and their height from the floor line is 10 feet ¾ inch. The 4-cylinder unit is 11 feet 1¾ inches long, the 6-cylinder 15 feet 1¾ inches and the 8-cylinder 19 feet 1¾ inches.

The engine is of the two-cycle, trunk-piston type, with oil-cooled power pistons. Bore and stroke are 14 inches. Main bearings are interchangeable, babbitt-lined, steel-shell type and all wristpins have bronze bushings. Two separate force-feed lubricators are used, one for the power cylinders and the other for the compressor cylinders.

Pumping-Jacks for Shallow Oil Fields Offered by National

To meet the demand of shallow oil fields for lower maintenance cost and higher mechanical efficiency in pumping-jacks, National Supply Co. has made two recent additions to its Type D line. These are Types D-25 and D-45 and have rated polished-rod loads of 2,500 to 4,500 pounds, respectively. Rated polished-rod stroke of both sizes is 30 inches. Longer strokes may be taken, however, with due regard to expansion and contraction in rod lines. For a given pull-rod stroke, the polished-



rod stroke can be adjusted over a considerable range by moving the pull-rod bearing box on the vertical member of the beam.

Types D-25 and D-45 jacks are, like the larger National Type D jacks for deep well pumping, of the underpull pattern, which reduces the number of pivot points to a minimum and provides for the greatest efficiency in counterbalancing. The frame is fabricated in two halves for ease in handling, and the beam is assembled in one solid unit with provision for bolting on the various bearing parts. The entire jack is fabricated from structural steel by electric arc welding.

Pull-bar and saddle bearings are of the oil-bath dust-proof type, equipped with oil seals. The hanger bearing has enclosed oil pockets at all bearing points. The jack beam is carried adjustably mounted on two bearing boxes on the frame, which permit longitudinal and angular movement, enabling the operator to align the hanger accurately over the center of the well and compensate for slight errors in erection.

Cabinet Increases Efficiency of Tests for Lubricating Oils

Improvement in the method of testing for the cloud- and pourpoints of lubricating oil is made possible through a testing cabinet developed by General Refrigeration Corp., Beloit, Wis. During the past year these test cabinets have been used by some of the larger oil refineries, and the manufacturers now are prepared to supply equipment of this type.

The cabinet is 36 inches long, 36 inches high and 22 inches deep, heavily insulated with corkboard, with black enamel finish and stainless steel top and trim. A one-half-horsepower water-cooled Lipman refrigerating machine connected to a full-flooded annular type lowside is installed

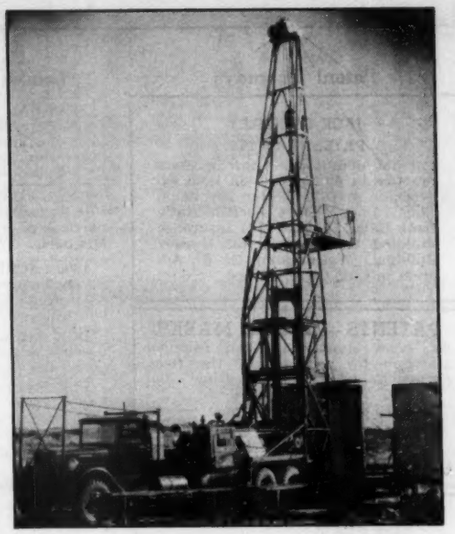
in the base of the cabinet, making the entire equipment self-contained. Power and water supply and drain lines only need be run to cabinet.

The cabinet has three compartments with openings in the top, one for each of the three temperatures at which cloud and pour tests are made. Each compartment has six 2-inch I.D. wells or jackets conforming to A.S.T.M. specifications, holding standard cylindrical oil test bottles giving the cabinet a total capacity of 18 test bottles.

Temperatures in each compartment are regulated by constant-pressure regulating valves conveniently located, one for each compartment. Once set at the proper point, temperatures are maintained automatically and the operator wastes no time in making adjustments. Temperature in the first compartment is maintained at 30 to 35° F., in the second compartment at 0 to +5° F., and in the third compartment —30 to —25° F. Temperatures are identical in all jackets of each compartment and may be quickly changed.

Two Hercules Diesels Provide Portable Rotary Rig Power

All power requirements of a portable diesel rotary drilling rig built by Franks Manufacturing



Co. of Tulsa, and operated by the geological department of one of the major oil companies are furnished by two Hercules diesel engines, it is reported by officials of the Hercules Motors Corp., Canton, Ohio. A Hercules Model DHXB engine is under the hood of the truck, a Halliburton Model 352, built by the Dart Truck Co. This engine supplies power to drive the truck to locations as well as to raise and lower the 55-foot derrick-type mast, operates the drawworks to pull the pipe in drilling operations, and drives the 6 by 12 slushpump. The total dength of the truck is 37 feet, and the length of the bed from cab to the rear end is 28 feet. The truck is equipped with tandem rear axles, carrying dual wheels, making a total of 10 tires on the ground.

The power unit on the truck which drives the rotary table is a Hercules DJXC diesel. The total weight of the complete rig is 62,000 pounds including slushpump and 55-foot mast. This rig has completed two wells in West Texas since being put into operation December 28. The first well was drilled to approximately 4,300 feet, finishing up in 6¼-inch hole. The second well was drilled to 4,100 feet in 31 days' drilling time. On both wells 2⅞-inch full-hole drillpipe was used, weighing 12.2 pounds per foot including tool-joints. The fuel cost for 31 days' drilling time to complete the 4,100-foot hole was $82.

Haas Leaves For South America

O. A. Haas, district manager for Allis-Chalmers Manufacturing Co. in Tulsa, left recently for South America, where he will stay about three months. Most of his time will be devoted to visiting oil fields and studying their equipment needs. Mr. Haas, who joined Allis-Chalmers in 1915, has been in the service of that company since then except for one year, during which he was chief engineer for International Supply Co. in Tulsa. He has a wide acquaintanceship among drilling contractors, oil company engineers and purchasing agents of the Southwest. During his absence R. I. Moore, his assistant, who was transferred from the Dallas, Tex., office in June, 1937, will serve as district manager.

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MAP of State of Texas, Eastern N. M., parts of Southern Okla., SW Ark. and La., shows Oil and Gas Fields in color, Counties, County Seats, elevations, coordinated alphabetical index of counties and fields.
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Leases and Drilling Blocks

SECURITY ABSTRACT COMPANY
El Dorado, Union County, Arkansas, Magnolia, Columbia County, Arkansas. Fee, Lease and Mineral ownership on short notice. Ownership maps.

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up. Owners—Address Attorney, Box 1122, Little Rock, Ark.

DRILLING deal wanted. 40,000 A. in So. Ill. in and around production area. Illinois Minerals Co., Cairo, Illinois.

I OWN 3,000 acres free in N. Pittsburg and Atoka Cos., Okla. 40 to 1000 A. tracts. No trades. Cash sale, lease or royalty, $5 to $25 per A. Townsite on 2 RRs. near production. J. E. Cavanagh, Baker, Ore.

BUY LAND—2½ acres, clear deed, for $50, $10 down, $5 month, in California's next prospective oil and gas field. Barth well drilling, down 2800 ft. Buy now. Bargain price. Kimbrough, 729 San Fernando Bldg., Los Angeles, California.

HAVE entire acreage of well defined Oil structure, Colorado location. Will lease to responsible development company. P. O. Box 35, RIFLE, Colorado.

WILL ASSIGN for reasonable price good part of 10,000 acres leases on structure shallow Illinois Basin. Now drilling test. Production near. Low rentals. Investigate. Address Box J-442, The Oil and Gas Journal, Tulsa, Oklahoma.

WILL TRADE LEASES
AROUND ROOKS COUNTY
KANSAS WILDCAT
For leases of similar value near other assured test wells. Drilling to commence by July 15. Good geology, responsible company and contractor.
P. O. Box 494, Tulsa, Oklahoma.

Leases and Drilling Blocks

SEVERAL surface mapped oil structures, edge Permian Basin. You check and deed me land, small mineral rights. Address Box J-452, The Oil and Gas Journal, Tulsa, Oklahoma.

GEOLOGIST located promising oil structure Texas Panhandle; structural map and particulars free. Arthur Nickell, Fayette, Missouri.

1800 ACRE block in Massillon and Leech Twp., Wayne Co., Ill. Any reasonable offer accepted. Other close-in royalty and leases. I. E. Theobold, Flora, Illinois.

OUR lists will help you turn your oil or royalty deal. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Okla.

FOR SALE: Drilling block 6,500 acres New Mexico, fully geologized and recommended. Sell part or all. Can furnish drilling outfit but must raise drilling money. C. H. Radford, Box 614, Pueblo, Colorado.

Business Opportunities

WILL GIVE substantial percentage of profits from my Patented Fishing Tool, for financing the same. None other like it. Bill Shannon, 428 Bankers Mortg. Bldg., Houston, Texas.

WILL RENT to responsible parties anywhere, unitized modern complete steam driven rotary with steel derrick, capable drilling 5500 feet or take clear interest in proven property to be drilled up with rig or may take some gas and some acreage on financed wildcat of merit for use of rig. Burnham Drilling Co., Polley Hotel, Center, Texas.

LARGE, financially-responsible midwest oil company will make volume contract on high octane, non-leaded gasoline over a period of time, thus enabling interested refiner to proceed with security, improve equipment, reduce sales force, eliminate credit hazards and re-open dormant plants. Address Box J-453, The Oil and Gas Journal, Tulsa, Oklahoma.

THERE will be a big play in Northwest Red River County 30 or 60 days, if interested write me. W. H. Upton, Paris, Texas.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer. Inc., Wilmington. Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Help Wanted

WILL BUY list production company personnel and drilling contractors in Illinois, Michigan and Ohio. P. O. Box 2603, Tulsa.

OIL SCOUT
who is thoroughly familiar with Illinois Basin. Attractive proposition to qualified man. Give details first letter. Address Box J-441, The Oil and Gas Journal, Tulsa, Oklahoma.

MANUFACTURER'S REPRESENTATIVE WANTED
With understanding of METALLIC PACKING. Must be active and established with gas compressing stations. Write promptly for particulars stating territory covered and lines you now represent. Address Box J-454, The Oil and Gas Journal, Tulsa, Oklahoma.

Situations Wanted

ACCT. OFF. MGR., age 37, with large refiner for ten years. Desires position anywhere in any capacity. Knowledge refining, producing, tankcar wholesale and station marketing. References on request. Address Box J-430, The Oil and Gas Journal, Tulsa, Oklahoma.

PIPE and Supply man, ten years' experience production and tools, office, clerical or executive ability, having served as Treas. Corporation, now employed, under Forty. Address Box J-450, The Oil and Gas Journal, Tulsa, Oklahoma.

PRODUCTION Foreman. Age 38. At present foreman 35,000 bbls. 20 years' experience. Multiple stage Oil and Gas separation, Oil Metering, latest methods of Gas-lift, deep well pumping, bottom hole pressure study. Logical reason for desiring change. Present employer as reference. Address Box J-541, The Oil and Gas Journal, Tulsa, Oklahoma.

BOOKKEEPER - ACCOUNTANT, age 22, University grad., studying law at night school, year with company operating 50 leases. Capable handling all office detail. Will go anywhere. Leo Gottlieb, 1310 S. Main, Tulsa, Oklahoma.

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Oil Industry Printing

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100 Acres, close to Dallas, about 50 acres landscaped, 5 acre lake, beautifully shrubbed at a cost of $27,000.00; balance in cultivation. Owners lodge and keepers quarters all modern. Barns, out houses, deep artesian well; 6 saddle horses, cows, sheep, etc. This is really a dream place and has taken several years to develop. For further information call or write Max Ploeger, Jr., Chas. E. Turner Co., Inc., 111 Murphy Street, Phone 7-8561, Dallas, Texas.

Equipment Wanted

WANTED—Rotary Drilling Rig Complete. Diesel or Gasoline. Shallow well capacity up to 3,000 feet. State make and condition and where located. Also skid winch swabbing machine for shallow wells. Price and condition. Address Box J-412, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED — Gasoline powered rotary drilling rig, capable of going 4,000 feet. Will pay cash for good bargain. Give full description. W. P. Luse, Magnolia Building, Dallas, Texas.

WANTED: Used Waukesha standard ASTM-CFR Octane testing unit. FELDMAN PETROLEUM CO., 2250 So. Ashland Ave., Chicago, Illinois.

BELTING WANTED—Used, heavy oil field and mill rubber and leather belting. State quantity, send sample and quote price. Richardson, Cawker, Kansas.

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1 Inch	*1 time*	*$5.00*
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3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

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Tulsa, Oklahoma